

Search research

①

A. JIANG

554387

=> fil reg

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

FULL ESTIMATED COST

ENTRY

SESSION

0.15

0.15

FILE 'REGISTRY' ENTERED AT 15:14:23 ON 14 NOV 2000
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STRUCTURE FILE UPDATES: 13 NOV 2000 HIGHEST RN 302776-13-2
DICTIONARY FILE UPDATES: 13 NOV 2000 HIGHEST RN 302776-13-2

TSCA INFORMATION NOW CURRENT THROUGH July 8, 2000

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

Structure search limits have been increased. See HELP SLIMIT
for details.

=> e phytostenol/cn 5

E1 1 PHYTOSPHINGOSINE, 1-PHOSPHATE/CN
E2 1 PHYTOSTANOL/CN
E3 0 --> PHYTOSTENOL/CN
E4 1 PHYTOSTEROLIN/CN
E5 1 PHYTOSTEROLS, ETHOXYLATED/CN

=> s e2; d ide can;

phytostenol

L1 1 PHYTOSTANOL/CN

L1 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2000 ACS
RN 127121-08-8 REGISTRY
CN Phytostanol (9CI) (CA INDEX NAME)
MF Unspecified
CI COM, MAN
SR CA
LC STN Files: BIOBUSINESS, BIOSIS, CA, CAPLUS, TOXLIT, USPATFULL

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

6 REFERENCES IN FILE CA (1967 TO DATE)
4 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
6 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 133:149763

REFERENCE 2: 132:127748

REFERENCE 3: 131:184219

REFERENCE 4: 130:68131

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Page 1

REFERENCE 5: 125:329276

REFERENCE 6: 113:106467

=> e

E6 1 PHYTOSTIMULIN/CN
E7 1 PHYTOSTREPTIN/CN
E8 1 PHYTOSULFOKINE .ALPHA./CN
E9 1 PHYTOSULFOKINE .BETA./CN
E10 1 PHYTOSULFOKINE-.ALPHA. (ORYZA SATIVA GENE PSK PRECURSOR)/CN
E11 1 PHYTOTON/CN
E12 1 PHYTOTOXIN (MYROTHECUM RORIDUM)/CN
E13 1 PHYTOTOXIN PKZH 1 (VERTICILLIUM DAHLIAE PEPTIDE MOIETY
REDUC
ED) /CN
E14 1 PHYTOTOXIN PKZH 1 (VERTICILLIUM DAHLIAE PEPTIDE MOIETY
REDUC
ED) CYCLIC (6.FWDARW.9)-DISULFIDE/CN
E15 1 PHYTOTOXIN PKZH 1 (VERTICILLIUM DAHLIAE PEPTIDE MOIETY
REDUC
ED) , CYCLIC (6.FWDARW.9)-DISULFIDE/CN
E16 1 PHYTOTOXIN PKZH 1 (VERTICILLIUM DAHLIAE PEPTIDE MOIETY) /CN
E17 1 PHYTOTROPINS/CN

=> e sitostenol/cn 5

E1 1 SITOSTANONE/CN
E2 1 SITOSTANYL P-COUMARATE/CN
E3 0 --> SITOSTENOL/CN
E4 1 SITOSTEROL/CN
E5 1 SITOSTEROL 3-O- (METHYL .BETA.-D-GLUCURONOPYRANOSIDE) /CN

=> s ?sitostenol?/cns

L2 0 ?SITOSTENOL?/CNS

=> s ?sitostanol?/cns

L3 22 ?SITOSTANOL?/CNS

=> s ?phytostenol?/cns

L4 0 ?PHYTOSTENOL?/CNS

=> s ?sitosterol?/cns

L5 174 ?SITOSTEROL?/CNS

=> s ?phytosterol?/cns

L6 5 ?PHYTOSTEROL?/CNS

=> s fatty acids

L7 7069 FATTY
 7409 ACIDS
 6120 FATTY ACIDS
 (FATTY(W)ACIDS)

=> s glyceride/cn

L8 0 GLYCERIDE/CN

=> s ?glyceride?/cns

L9 1039 ?GLYCERIDE?/CNS

=> s (linoleic acid or linoleate)/cn

1 LINOLEIC ACID/CN
1 LINOLEATE/CN
L10 2 (LINOLEIC ACID OR LINOLEATE)/CN

=> e serum cholesterol/cn 5

E1 1 SERUM AND GLUCOCORTICOID-REGULATED PROTEIN KINASE (MOUSE
GEN E SGK)/CN
E2 1 SERUM AND GLUCOCORTICOID-REGULATED PROTEIN KINASE
(ORYCTOLAG US CUNICULUS STRAIN NEW-ZEALAND-WHITE RENAL CORTEX
COLLECTIN G TUBULE GENE SGK)/CN
E3 0 --> SERUM CHOLESTEROL/CN
E4 1 SERUM GLOBULIN/CN
E5 1 SERUM GONADOTROPHIN/CN

=> s serum cholesterol

646 SERUM
1 SERUMS
78 SERA
724 SERUM
(SERUM OR SERUMS OR SERA)
1645 CHOLESTEROL
L11 0 SERUM CHOLESTEROL
(SERUM(W) CHOLESTEROL)

=> fil medl,capplus,biosis,embase,wpids,jicst,conf,ntic

'NTIC' IS NOT A VALID FILE NAME
Enter "HELP FILE NAMES" at an arrow prompt (=>) for a list of files
that are available. If you have requested multiple files, you can
specify a corrected file name or you can enter "IGNORE" to continue
accessing the remaining file names entered.
ENTER A FILE NAME OR (IGNORE) ntis

COST ~~Y~~ U.S. DOLLARS

SINCE FILE
ENTRY

TOTAL
SESSION

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Page 3

to search for both 'woman' and 'women'. Enter "HELP TRUNCATION" at an arrow prompt (=>) for more information.

=> s (11 or 13 or 15 or 16 or phytoste!ol? or sitoste!ol? or sitosta!ol?)

L12 1798 FILE MEDLINE
L13 11957 FILE CAPLUS
L14 3883 FILE BIOSIS
L15 2534 FILE EMBASE
LEFT TRUNCATION IGNORED FOR '?SITOSTANOL?' FOR FILE 'WPIDS'
LEFT TRUNCATION IGNORED FOR '?SITOSTEROL?' FOR FILE 'WPIDS'
LEFT TRUNCATION IGNORED FOR '?PHYTOSTEROL?' FOR FILE 'WPIDS'
L16 563 FILE WPIDS
L17 242 FILE JICST-EPLUS
'CN' IS NOT A VALID FIELD CODE
'CNS' IS NOT A VALID FIELD CODE
LEFT TRUNCATION IGNORED FOR '?SITOSTANOL?' FOR FILE 'CONF'
LEFT TRUNCATION IGNORED FOR '?SITOSTEROL?' FOR FILE 'CONF'
LEFT TRUNCATION IGNORED FOR '?PHYTOSTEROL?' FOR FILE 'CONF'
L18 1 FILE CONF
'CN' IS NOT A VALID FIELD CODE
'CNS' IS NOT A VALID FIELD CODE
LEFT TRUNCATION IGNORED FOR '?SITOSTANOL?' FOR FILE 'NTIS'
LEFT TRUNCATION IGNORED FOR '?SITOSTEROL?' FOR FILE 'NTIS'
LEFT TRUNCATION IGNORED FOR '?PHYTOSTEROL?' FOR FILE 'NTIS'
L19 11 FILE NTIS

TOTAL FOR ALL FILES

=> L20 20989 (L1 OR L3 OR L5 OR L6 OR PHYTOSTE!OL? OR SITOSTE!OL? OR SITOSTA!
OL?)

Left truncation is not valid in the specified search field in the specified file. The term has been searched without left truncation. Examples: '?TERPEN?' would be searched as 'TERPEN?' and '?FLAVONOID' would be searched as 'FLAVONOID.'

If you are searching in a field that uses implied proximity, and you used a truncation symbol after a punctuation mark, the system may interpret the truncation symbol as being at the beginning of a term. Implied proximity is used in search fields indexed as single words, for example, the Basic Index.

=> s 20 and (17 or fatty acids or d2.241.81.407/ct or d10.516.251/ct)
<-----User Break----->
u
SEARCH ENDED BY USER

=> s 120 and (17 or fatty acids or d2.241.81.407/ct or d10.516.251/ct)

L21 166 FILE MEDLINE
L22 2099 FILE CAPLUS
L23 376 FILE BIOSIS
L24 96 FILE EMBASE
L25 52 FILE WPIDS
L26 29 FILE JICST-EPLUS
'CT' IS NOT A VALID FIELD CODE

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Page 5

Phytoste

L27 0 FILE CONF
L28 3 FILE NTIS

TOTAL FOR ALL FILES

L29 2821 L20 AND (L7 OR FATTY ACIDS OR D2.241.81.407/CT OR
D10.516.251/CT)

=> s 129 and (glyceride? or 19 or d10.516.351/ct or monoacylglycerols)

L30 9 FILE MEDLINE
L31 429 FILE CAPLUS
L32 31 FILE BIOSIS
L33 4 FILE EMBASE
LEFT TRUNCATION IGNORED FOR '?GLYCERIDE?' FOR FILE 'WPIDS'
L34 6 FILE WPIDS
L35 5 FILE JICST-EPLUS
'CNS' IS NOT A VALID FIELD CODE
'CT' IS NOT A VALID FIELD CODE
LEFT TRUNCATION IGNORED FOR '?GLYCERIDE?' FOR FILE 'CONF'
L36 0 FILE CONF
'CNS' IS NOT A VALID FIELD CODE
LEFT TRUNCATION IGNORED FOR '?GLYCERIDE?' FOR FILE 'NTIS'
L37 0 FILE NTIS

TOTAL FOR ALL FILES

L38 484 L29 AND (GLYCERIDE? OR L9 OR D10.516.351/CT OR
MONOACYLGLYCEROLS
)

Left truncation is not valid in the specified search field in the specified file. The term has been searched without left truncation. Examples: '?TERPEN?' would be searched as 'TERPEN?' and '?FLAVONOID' would be searched as 'FLAVONOID.'

If you are searching in a field that uses implied proximity, and you used a truncation symbol after a punctuation mark, the system may interpret the truncation symbol as being at the beginning of a term. Implied proximity is used in search fields indexed as single words, for example, the Basic Index.

=> s 138 and (carboxylic(a)acid? or d2.241/ct)

L39 0 FILE MEDLINE
L40 15 FILE CAPLUS
L41 1 FILE BIOSIS
L42 0 FILE EMBASE
L43 1 FILE WPIDS
L44 4 FILE JICST-EPLUS
'CT' IS NOT A VALID FIELD CODE
L45 0 FILE CONF
L46 0 FILE NTIS

TOTAL FOR ALL FILES

L47 21 L38 AND (CARBOXYLIC (A) ACID? OR D2.241/CT)

L48 0 FILE MEDLINE
L49 4 FILE CAPLUS
L50 0 FILE BIOSIS
L51 0 FILE EMBASE
L52 0 FILE WPIDS
L53 2 FILE JICST-EPLUS
'CN' IS NOT A VALID FIELD CODE
'CT' IS NOT A VALID FIELD CODE
L54 0 FILE CONF
'CN' IS NOT A VALID FIELD CODE
L55 0 FILE NTIS

TOTAL FOR ALL FILES

L56 6 L47 AND (LINOLEIC ACID OR L10 OR LINOLEATE OR
(D2.241.81.436.390
OR D10.516.251.355.432 OR D10.516.251.355.310.515) /CT)

=> dup rem 156

DUPLICATE IS NOT AVAILABLE IN 'CONF'.

ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L56

L57 6 DUP REM L56 (0 DUPLICATES REMOVED)

=> d 1-6 cbib abs hit

L57 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2000 ACS

1999:750672 Document No. 132:77784 Avocado oil. Evolution of lipid components during ripening of the fruits of some cultivars grown in Southern Italy. Poiana, M.; Giuffre, A. M.; Mincione, B.; Giuffre, F. (Istituto di Microbiologia e Tecnologia Agraria e Forestale, Universita degli studi di Reggio Calabria, Italy). Riv. Ital. Sostanze Grasse, 76(6), 257-275 (Italian) 1999. CODEN: RISGAD. ISSN: 0035-6808.

Publisher: Stazione Sperimentale per le Industrie degli Oli e dei Grassi.
AB The ripening of avocado fruits of the Bacon, Hass, and Reed cultivars grown in 3 areas of Southern Italy was studied. The oil produced from fruits harvested in several stages of ripening and its biol. stability were studied. The fruit pulp chem. compn. was examd. and the extd. oil was analyzed. The compn. of triglycerides, **fatty acids**, sterols, and tocopherols was detd. The Bacon and Hass cultivars showed good oil yields and good oil stability.

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ST avocado ripening oil **glyceride** fatty acid sterol tocopherol

IT Fats and Glyceridic oils, analysis

RL: AMX (Analytical matrix); ANST (Analytical study)
(avocado; **glyceride**, fatty acid, sterol and tocopherol compn.
of avocado oil in relation to fruit ripening stage in 3 cultivars
grown

in Southern Italy)

IT Growth and development, plant
(fruit ripening; **glyceride**, fatty acid, sterol and tocopherol
compn. of avocado oil in relation to fruit ripening stage in 3
cultivars grown in Southern Italy)

IT Avocado
(**glyceride**, fatty acid, sterol and tocopherol compn. of
avocado oil in relation to fruit ripening stage in 3 cultivars grown
in
Southern Italy)

IT **Carboxylic acids**, biological studies
Carotenes, biological studies
Chlorophylls, biological studies
Fatty acids, biological studies
Glycerides, biological studies
Lipids, biological studies
Mineral elements, biological studies
Sterols
Tocopherols
RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(**glyceride**, fatty acid, sterol and tocopherol compn. of
avocado oil in relation to fruit ripening stage in 3 cultivars grown
in
Southern Italy)

IT Oxidation
(lipid; **glyceride**, fatty acid, sterol and tocopherol compn.
of avocado oil in relation to fruit ripening stage in 3 cultivars
grown
in Southern Italy)

IT Carbohydrates, biological studies
RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(reducing sugars; **glyceride**, fatty acid, sterol and
tocopherol compn. of avocado oil in relation to fruit ripening stage
in
3 cultivars grown in Southern Italy)

IT 57-10-3, Hexadecanoic acid, biological studies 57-11-4, Octadecanoic
acid, biological studies 57-88-5, Cholesterol, biological studies
59-02-9, .alpha. Tocopherol 60-33-3, **Linoleic**
acid, biological studies 83-45-4, **Sitostanol**
83-46-5, .beta.-**Sitosterol** 83-48-7, **Stigmasterol**
112-80-1, Oleic acid, biological studies 112-85-6, **Behenic acid**
122-32-7, **Triolein** 148-03-8, .beta. Tocopherol 373-49-9,
Palmitoleic acid 463-40-1, Linolenic acid 474-60-2, **Campestanol**
474-62-4, **Campesterol** 474-63-5, 24-Methylenecholesterol 506-12-7,
Heptadecanoic acid 506-30-9, Arachic acid 516-78-9,
.DELTA.7-Campesterol 537-40-6 544-63-8, **Tetradecanoic acid**,
biological studies 555-44-2, **Tripalmitin** 557-59-5, **Lignoceric**
acid 2364-23-0, **Clerosterol** 6869-99-4, .DELTA.7-Stigmastenol
7616-22-0, .gamma. Tocopherol 14465-68-0 18472-36-1,
.DELTA.5-Avenasterol 20246-55-3 23290-26-8,
.DELTA.7-Avenasterol 26836-30-6 26836-35-1
26836-36-2 26836-37-3 27071-84-7 28040-00-8
28409-91-8 28409-94-1 28630-67-3
28880-78-6 28933-89-3, **Eicosenoic acid** 28949-66-8
29589-86-4 29661-35-6 38703-17-2 38703-23-0
82181-49-5 87973-00-0 125547-89-9 125547-91-3

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RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(**glyceride**, fatty acid, sterol and tocopherol compn. of
avocado oil in relation to fruit ripening stage in 3 cultivars grown
in
Southern Italy)

L57 ANSWER 2 OF 6 JICST-EPlus COPYRIGHT 2000 JST
900402115 Chemical composition of lipids, especially triacylglycerol, in grape
seeds.. OHNISHI M; ITO S; FUJINO Y; HIROSE S; KAWAGUCHI M. Obihiro Univ.
Agriculture and Veterinary Medicine, Obihiro, JPN; Tokachi-Ikeda Research
Inst. Viticulture and Enology, Hokkaido, JPN. Agric Biol Chem. (1990)
vol. 54, no. 4, pp. 1035-1042. Journal Code: G0021A (Fig. 1, Tbl. 9, Ref.
24) CODEN: ABCHA6; CODEN: 0002-1369; Pub. Country: Japan. Language:
English.

AB Total lipids were extracted from five varieties of grape seeds and
systematically analyzed for their chemical compositions. The yields of
the
total lipids were 10-16%, and triacylglycerol(TG) usually amounted to c.
90% of the whole. From a reversed-phase high-performance liquid
chromatographic analysis, the major molecular species of TG were shown to
be trilinolein (40%), oleoyldilinolein (21%) and palmitoyldilinolein
(18%). The component **fatty acids** were asymmetrically
distributed at C-1 and C-3 of the TG molecule. Palmitic acid was
exclusively located at the C-1 position, although unsaturated
fatty acids, especially **linoleic acid**
, were predominant at the C-1 position, as at the C-2 and C-3 positions.
Compared with TG, higher proportions of palmitic and linolenic acids were
generally observed in thirteen other lipid classes isolated from grape
seeds, although the fatty acid compositions of the diacylglycerol and
free
fatty acids were roughly identical with that of TG. As
component sterols, **sitosterol**, campesterol and stigmasterol,
especially the former, were predominant. Their relative proportions were
somewhat different from each other between the neutral and polar sterol
lipids. (author abst.)

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somewhat different from each other between the neutral and polar sterol
lipids. (author abst.)

CT grape; seed; triglyceride; fatty acid composition; breed specificity; vegetable fats and oils; wine making; vitamin F; polyene; aliphatic carboxylic acid; unsaturated carboxylic acid; olefin compound; diene
BT edible fruit; garden crop; crop(agriculture); agricultural food; food; Vitaceae; Choripetalae; Dicotyledoneae; Angiospermae; Phanerogamae; plant(organism); plant organ; glyceride; carboxylate(ester); ester; lipid; aliphatic alcohol; alcohol; hydroxy compound; chemical composition; composition(constitution); biological comparison; comparison; fats and oils; oils; fermented food production; food processing; working and processing; fatty acid; carboxylic acid; fat-soluble vitamin; vitamin

L57 ANSWER 3 OF 6 JICST-EPlus COPYRIGHT 2000 JST
900578062 Compositions of lipid classes, fatty acids and sterols in domestic rye grains.. MANO YASUO; ONISHI MASAO; SATO HARUHIKO; NAKANISHI HAJIME; MAEMOTO MASAMICHI; ITO SEISUKE.
Obihirotanitankidaigaku; Obihiro Univ. of Agriculture and Veterinary Medicine. Nippon Shokuhin Kogyo Gakkaishi (Journal of Japanese Society

of Food Science and Technology). (1990) vol. 37, no. 5, pp. 338-345. Journal Code: F0895A (Tbl. 7, Ref. 21) CODEN: NSKGAX; CODEN: 0029-0394; Pub. Country: Japan. Language: Japanese.

AB Total lipids were extracted from four varieties of domestic rye grains, and their lipid class compositions, the component fatty acids and sterols were investigated. The yields of the total lipids were 1.6-1.9%. The neutral lipid fraction usually amounted to

about 70% of the whole, in which triacylglycerol was predominant. The ratio of the glycolipid and phospholipid fractions was approximately 1:1.4; the principal lipid classes were diglycosyldiacylglycerol, monoglycosyldiacylglycerol and cerebroside in the former group, and phosphatidylcholine, phosphatidylethanolamine, phosphatidylinositol and lysophosphatidylcholine in the latter one. The main fatty acids in nine lipid classes were generally linoleic, palmitic, oleic and linolenic acids in the decreasing order, except for acylsterol, in which the most abundant one was palmitic acid. The relative proportions

of linoleic acid were 55-60% in triacylglycerol, 65-79% in two glyceroglycolipids and 41-68% in phospholipid classes.

Seven types of 4-desmethylsterols were detected, among which sitosterol and campesterol, particularly the former one, were predominant in neutral and polar sterol lipids. No significant differences were recognized in the

chemical compositions of the rye grain lipids among the varieties harvested in Hokkaido, Japan. (author abst.)

TI Compositions of lipid classes, fatty acids and sterols in domestic rye grains.

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the glycolipid and phospholipid fractions was approximately 1:1.4; the principal lipid classes were diglycosyldiacylglycerol, monoglycosyldiacylglycerol and cerebroside in the former group, and phosphatidylcholine, phosphatidylethanolamine, phosphatidylinositol and lysophosphatidylcholine in the latter one. The main **fatty acids** in nine lipid classes were generally linoleic, palmitic, oleic and linolenic acids in the decreasing order, except for acylsterol, in which the most abundant one was palmitic acid. The relative proportions of **linoleic acid** were 55-60% in triacylglycerol, 65-79% in two glyceroglycolipids and 41-68% in phospholipid classes.

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chemical compositions of the rye grain lipids among the varieties harvested in Hokkaido, Japan. (author abst.)

CT Secale cereale; Hokkaido; cultivar; lipid; fatty acid composition; plant sterol; triglyceride; aliphatic **carboxylic acid**; rye flour

BT cereal; agricultural food; food; common crop; crop(agriculture); Secale; Gramineae; Monocotyledoneae; Angiospermae; Phanerogamae; plant(organism); Japan; East Asia; Asia; breed; chemical composition; composition(constitution); sterol; steroid; derived lipid; glyceride; carboxylate(ester); ester; aliphatic alcohol; alcohol; hydroxy compound; **carboxylic acid**; cereal flour; processed cereal product

L57 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2000 ACS

1990:213906 Document No. 112:213906 Lipids of oleaster fruits. Goncharova, N. P.; Glushenkova, A. I. (Inst. Khim. Rastit. Veshchestv, Tashkent, USSR). Khim. Prir. Soedin. (1), 17-21 (Russian) 1990. CODEN: KPSUAR. ISSN: 0023-1150.

AB Lipids were examd. in the seeds and pericarp of 3 morphol. forms of oleaster (*Elaeagnus angustifolia*). **Linoleic acid** was the major fatty acid in the seed oil (.1toreq.59.1% of the triglyceride fraction). Principal **fatty acids** in the pericarp were palmitic, oleic, and linoleic. **.beta.-Sitosterol** was the major sterol. Nonacosane accounted for >55% of the alkanes in both seeds and pericarp.

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IT Alkanes, biological studies

Fatty acids, biological studies

Glycerides, biological studies

Glycolipids

Lipids, biological studies

RL: BIOL (Biological study)

(of oleaster fruits and seeds)

IT Triterpenes and Triterpenoids

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Page 11

RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(carboxylic acids, of oleaster fruits)

IT **Glycerides**, biological studies
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(epoxy, of oleaster seeds)

IT **Fatty acids**, esters
RL: BIOL (Biological study)
(esters, of oleaster fruits and seeds)

IT **Carboxylic acids**, biological studies
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(triterpenoid, of oleaster fruits)

IT 57-10-3, Hexadecanoic acid, biological studies 57-11-4, C18:0, biological studies 60-33-3, 9,12-Octadecadienoic acid (Z,Z)-, biological studies 112-80-1, 9-Octadecenoic acid (Z)-, biological studies 143-07-7, Dodecanoic acid, biological studies 334-48-5, Decanoic acid 506-12-7, Heptadecanoic acid 544-63-8, Tetradecanoic acid, biological studies 1002-84-2, Pentadecanoic acid 27213-43-0 28039-99-8
RL: BIOL (Biological study)
(of oleaster fruit and seeds)

IT 83-46-5 112-95-8, Eicosane 593-45-3, Octadecane 593-49-7, Heptacosane 629-92-5, Nonadecane 629-94-7, Heneicosane 629-97-0, Docosane 629-99-2, Pentacosane 630-01-3, Hexacosane 630-02-4, Octacosane 630-03-5, Nonacosane 630-04-6, Hendecacosane 638-67-5, Tricosane 638-68-6, Triacontane 646-31-1, Tetracosane 2363-71-5, Heneicosanoic acid 2433-96-7, Tricosanoic acid 28929-01-3
31152-46-2
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(of oleaster fruits)

L57 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2000 ACS
1984:588239 Document No. 101:188239 Effects of sour rot on the composition of the lipid fraction of different parts of grape berries (*Vitis vinifera* cv. *Fortana*). Zironi, R.; Frega, N.; Conte, L. S.; Lercker, G. (Cent. Ric. Vitic. Enol., Univ. Bologna, Bologna, 40126, Italy). *Vitis*, 23(2), 93-105 (French) 1984. CODEN: VITIAY. ISSN: 0042-7500.

AB As compared with healthy grape berries of *V. vinifera* cv. *Fortana*, the berries infected with sour rot showed a higher lipid content of the pulp including the skin and a lower lipid content of the seeds. In the seeds from healthy and diseased berries, no difference in fatty acid compn. was obsd., whereas the pulp and skin from infected berries had a higher content of **fatty acids** with <18 C atoms than did the pulp of healthy berries. An increased oleic and a decreased **linoleic acid** content was found in the pulp of infected as compared to that of healthy berries. The former showed also a higher ratio between unsatd. and satd. **fatty acids**. In the pulp and skin oleanolic aldehyde, oleanolic acid, and erythrodiol were detected. The level of the latter was higher in pulp from infected than from healthy berries.

AB As compared with healthy grape berries of *V. vinifera* cv. *Fortana*, the berries infected with sour rot showed a higher lipid content of the pulp including the skin and a lower lipid content of the seeds. In the seeds Prepared by M. Hale 308-4258 Page 12

from healthy and diseased berries, no difference in fatty acid compn. was obsd., whereas the pulp and skin from infected berries had a higher content of **fatty acids** with <18 C atoms than did the pulp of healthy berries. An increased oleic and a decreased **linoleic acid** content was found in the pulp of infected as compared to that of healthy berries. The former showed also a higher ratio between unsatd. and satd. **fatty acids**. In the pulp and skin oleanolic aldehyde, oleanolic acid, and erythrodiol were detected. The level of the latter was higher in pulp from infected than from healthy berries.

IT **Fatty acids**, biological studies
Glycerides, biological studies
Lipids, biological studies
RL: BIOL (Biological study)
(of grapevine parts, sour rot disease effect on)

IT **Terpenes and Terpenoids**, biological studies
RL: BIOL (Biological study)
(**carboxylic acids**, of grapevine parts in sour disease)

IT **Alcohols**, biological studies
Carboxylic acids, biological studies
RL: BIOL (Biological study)
(terpenoid, of grapevine parts in sour disease)

IT 83-46-5 83-48-7 474-62-4 545-46-0 545-48-2 6869-99-4
17605-67-3 18472-36-1
RL: BIOL (Biological study)
(of grape vine parts in sour rot disease)

IT 57-10-3, biological studies 57-11-4, biological studies 57-88-5,
biological studies 60-33-3, biological studies 111-02-4
112-80-1, biological studies 112-85-6 143-07-7, biological studies
373-49-9 463-40-1 506-12-7 506-30-9 506-38-7 506-46-7
506-48-9
506-50-3 508-02-1 511-61-5 544-63-8, biological studies 544-64-9
557-59-5 559-70-6 1449-09-8 2363-71-5 2433-96-7 3625-52-3
4250-38-8 4657-58-3 7138-40-1 17020-22-3 38232-01-8 38232-03-0
60485-38-3
RL: BIOL (Biological study)
(of grapevine parts in sour rot disease)

L57 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2000 ACS
1981:617663 Document No. 95:217663 The constituents of the flower of *Ligustrum obtusifolium* Sieb. et Zucc. Kikuchi, Masao (Tohoku Coll. Pharm., Sendai, 983, Japan). *Nippon Nogei Kagaku Kaishi*, 55(9), 821-3 (Japanese) 1981. CODEN: NNNKAA.

AB Steam distn. of 32 g cold ether ext. from 2 kg flowers of *L. obtusifolium* yielded 0.9 g essential oil consisting of 35 mg acids (I), 50 mg phenols (II), 160 mg of a neutral fraction III (III) and 655 mg of a neutral fraction IV (IV) eluted through silica gel chromatog. with hexane and ether, resp. I was detd. on methylation and gas chromatog. (Silicone OV-17, 60-250.degree.) to contain mainly phenylacetic acid (70%) with n-C₆-C₁₂ alkanoic and benzoic acids. From II, III, and IV were isolated phenol, o-, m-, and p-cresol, guaiacol, eugenol (65%); C₁₅-C₂₆ n-alkanes; and cis-3-hexen-1-ol, linalool, benzyl alc., phenylethyl alc., and benzaldehyde, resp. From 29 g solid residue of steam distn. were isolated

on silica gel chromatog. (solvent) followed by gas chromatog. 1.45 g
Prepared by M. Hale 308-4258 Page 13

n-C21-C33 n-alkanes (C6H14); 1.45 g higher fatty acid ester and 1.45 g glycerides, 4.35 g palmitic and oleanolic glycerides (C6H14-Et2O 9:1); 0.73 g n-C18-C28 alcs. (4:1); 0.37 g lauric, palmitic, linoleic acid (4:1); 0.24 g .alpha.- and .beta.-amyrin (PhH-EtOAc 9:1); 0.33 g sitosterol (4:1). From hot aq. residue of steam distn., were isolated on cooling 0.2 g quercetin and 0.1 g kaempferol and on ether extn. and silica gel chromatog. p-coumaric acid 0.1, caffeic acid 0.1, ferulic acid 0.2, and p-hydroxy-.beta.-phenylethyl alc. 0.2 g.

AB Steam distn. of 32 g cold ether ext. from 2 kg flowers of *L. obstifolium* yielded 0.9 g essential oil consisting of 35 mg acids (I), 50 mg phenols (II), 160 mg of a neutral fraction III (III) and 655 mg of a neutral fraction IV (IV) eluted through silica gel chromatog. with hexane and ether, resp. I was detd. on methylation and gas chromatog. (Silicone OV-17, 60-250.degree.) to contain mainly phenylacetic acid (70%) with n-C6-C12 alkanoic and benzoic acids. From II, III, and IV were isolated phenol, o-, m-, and p-cresol, guaiacol, eugenol (65%); C15-C26 n-alkanes; and cis-3-hexen-1-ol, linalool, benzyl alc., phenylethyl alc., and benzaldehyde, resp. From 29 g solid residue of steam distn. were isolated

on silica gel chromatog. (solvent) followed by gas chromatog. 1.45 g n-C21-C33 n-alkanes (C6H14); 1.45 g higher fatty acid ester and 1.45 g glycerides, 4.35 g palmitic and oleanolic glycerides (C6H14-Et2O 9:1); 0.73 g n-C18-C28 alcs. (4:1); 0.37 g lauric, palmitic, linoleic acid (4:1); 0.24 g .alpha.- and .beta.-amyrin (PhH-EtOAc 9:1); 0.33 g sitosterol (4:1). From hot aq. residue of steam distn., were isolated on cooling 0.2 g quercetin and 0.1 g kaempferol and on ether extn. and silica gel chromatog. p-coumaric acid 0.1, caffeic acid 0.1, ferulic acid 0.2, and p-hydroxy-.beta.-phenylethyl alc. 0.2 g.

IT Carboxylic acids, biological studies

RL: BIOL (Biological study)
(alkanoic, of Privet flower)

IT Alcohols, biological studies

Alkanes, biological studies

Fatty acids, esters

Fatty acids, biological studies

Glycerides, biological studies

Phenols, biological studies

RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(of Privet flower)

IT 60-12-8 65-85-0, biological studies 78-70-6 83-46-5
90-05-1 95-48-7, biological studies 97-53-0 100-51-6, biological studies 100-52-7, biological studies 103-82-2, biological studies 106-44-5, biological studies 108-39-4, biological studies 108-95-2, biological studies 117-39-5 331-39-5 501-94-0 520-18-3 559-70-6 638-95-9 928-96-1 1135-24-6 7400-08-0
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(of Privet flower)

=> s fabry b?/au,in

'IN' IS NOT A VALID FIELD CODE
Prepared by M. Hale 308-4258

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L58      18 FILE MEDLINE
L59      219 FILE CAPLUS
L60      25 FILE BIOSIS
'IN' IS NOT A VALID FIELD CODE
L61      25 FILE EMBASE
L62      182 FILE WPIDS
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'IN' IS NOT A VALID FIELD CODE
L64      0 FILE CONF
'IN' IS NOT A VALID FIELD CODE
L65      0 FILE NTIS
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TOTAL FOR ALL FILES
L66 469 FABRY B?/AU, IN

=> s 166 and 120

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L67      0 FILE MEDLINE
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L71      4 FILE WPIDS
L72      0 FILE JICST-EPLUS
L73      0 FILE CONF
L74      0 FILE NTIS
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TOTAL FOR ALL FILES
L75 9 L66 AND L20

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L76      0 FILE MEDLINE
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L79      0 FILE EMBASE
L80      4 FILE WPIDS
L81      0 FILE JICST-EPLUS
L82      0 FILE CONF
L83      0 FILE NTIS
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TOTAL FOR ALL FILES
L84 9 L75 NOT L56

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DUPLICATE IS NOT AVAILABLE IN 'CONF'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L84
L85 7 DUP REM L84 (2 DUPLICATES REMOVED)

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L85 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2000 ACS DUPLICATE 1
2000:259954 Document No. 132:283924 Use of nanoscale sterols and sterol
Prepared by M. Hale 308-4258 Page 15

esters for producing cosmetic and/or pharmaceutical preparations.
Foerster, Thomas; **Fabry, Bernd**; Hollenbrock, Martina; Kropf, Christian (Henkel Kommanditgesellschaft auf Aktien, Germany). PCT Int. Appl. WO 2000021490 A1 20000420, 29 pp. DESIGNATED STATES: W: AU, BG, BR, BY, CA, CN, CZ, HU, ID, IN, IS, JP, KR, LT, LV, MX, NO, NZ, PL, RO, RU, SI, SK, TR, UA, US, ZA; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (German). CODEN: PIXXD2. APPLICATION: WO 1999-EP7359 19991005. PRIORITY: US 1998-PV104144 19981014.

AB When sterols and/or sterol esters with particle diams. of 10-300 nm are used for producing cosmetic and/or pharmaceutical preps., the fineness of

the particles compared to known sterol and sterol ester preps. ensures that they penetrate into the stratum corneum quickly when applied topically. Thus, nanoparticulate **phytosterols** were prep'd. by rapid decompression and expansion of a supercrit. soln. of the sterols in CO₂ at 160.degree. into an expansion chamber contg. a 4% aq. soln. of

PEG, followed by evapn. to dryness. A water-in-oil sunscreen cream was prep'd. contg. Dehymuls PGPH 2.0, Lameform TGI 4.0, beeswax 3.0, Plantaren 818 5.0, dioctyl carbonate 5.0, Cetiol J600 2.0, Cetiol OE 3.0, panthenol + bisabolol 1.2, **phytosterols** 0.5, Neo Heliopan Hydro 3.0, Neo Heliopan BB 1.5, Neo Heliopan E 1000 5.0, Neo Heliopan AV 4.0, Uvinul T 150 2.0, 86% glycerin 5.0, preservative, and H₂O to 100 wt.%.

L85 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2000 ACS

1999:344854 Document No. 130:347399 Use of mixtures containing **phytostenols** for producing hypocholesteremic preparations.

Fabry, Bernd (Henkel Kommanditgesellschaft auf Aktien, Germany). PCT Int. Appl. WO 9925362 A1 19990527, 19 pp. DESIGNATED STATES: W: AU, BG, BR, BY, CA, CN, CZ, HU, ID, IS, JP, KR, LT, LV, MX, NO, NZ, PL, RO, RU, SI, SK, TR, UA, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (German). CODEN: PIXXD2. APPLICATION: WO 1998-EP7059 19981105. PRIORITY: DE 1997-19750453 19971114.

AB Mixts. of active agents contg. (a) **phytostenols** and/or **phytostenol** esters and (b) conjugated fatty acids or their glycerides are used to produce hypocholesteremic preps. These mixts. have a synergistic effect in reducing the cholesterol content of serum. When encapsulated in gelatin, the preps. can be administered orally in high doses without any problems; they may also be incorporated into food products. Thus, the contents of a 1.5-g capsule, contg. 5 wt.% .beta.-sitostanyl laurate, 5 wt.% conjugated linoleic acid, and radiolabeled cholesterol, were administered to fasting rats by gavage. The radioactivity level in the blood 48 h later was 12% of that in rats fed labeled cholesterol alone, and was also markedly lower than that in rats given either the phytostanol or the fatty acid alone.

L85 ANSWER 3 OF 7 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD

AN 1999-314061 [27] WPIDS

AB DE 19750453 A UPAB: 19990714

NOVELTY - The preparation of a hypocholesterinemic agent (A) comprises mixing: (a) **phytostenol** and/or **phytostenol** ester; and (b) fatty acids with 6-24C and at least two conjugated double bonds, especially their glycerides.

USE - (A) is used to lower the cholesterol levels in mammal serum.

L85 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2000 ACS

Prepared by M. Hale 308-4258

DUPLICATE 2

Page 16

1998:771359 Document No. 130:25230 Use of selected **phytosterol** esters for preparation of hypocholesterolemic agents. **Fabry**, Bernd (Henkel K.-G.a.A., Germany). Ger. DE 19750422 Cl 19981126, 6 pp. (German). CODEN: GWXXAW. APPLICATION: DE 1997-19750422 19971114.

AB Use of **phytosterol** esters of unsatd. conjugated fatty acids for prepn. of hypocholesterolemic agents is described. Thus, in a gelatin capsule is added a mixt. of different .beta.-**sitosterol** esters (5%), radioactively-labeled cholesterol (0.5%) and if necessary vitamin E.

E. The blood of animals receiving these capsules were tested for radioactivity at 3, 6, 12, 24, and 48 h; after 48 h radioactivity was down to 15-21%.

L85 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2000 ACS

1998:385506 Document No. 129:36452 Use of mixtures of phytostanols and tocopherols for the production of hypocholesteremic agents. Weitkemper, Norbert; **Fabry**, Bernd (Henkel Kommanditgesellschaft Auf Aktien, Germany; Weitkemper, Norbert; Fabry, Bernd). PCT Int. Appl. WO 9823275

A1 19980604, 15 pp. DESIGNATED STATES: W: AU, BR, CA, CN, CZ, HU, JP, KR, MX, NO, NZ, PL, RU, SI, SK, US; RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (German). CODEN: PIXXD2. APPLICATION: WO 1997-EP6447 19971119. PRIORITY: DE 1996-19649286 19961128; DE 1997-19700796 19970113.

AB Tocopherols, though themselves having little or no hypocholesteremic activity, potentiate the hypocholesteremic action of phytostanol esters. The effect is further potentiated by chitosan, **phytosterol** sulfates, RNA, and DNA. If these agents are encapsulated in gelatin, they

can be administered orally in high doses without problems. Thus, a gelatin capsule contg. .beta.-**sitostanol** laurate 5, vitamin E 5, and radiolabeled cholesterol 0.5 wt.% was administered to rats by gavage. The level of blood radioactivity 24 h later was 39% of that in control rats, compared to 51% in rats receiving .beta.-**sitostanol** laurate but not vitamin E.

L85 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2000 ACS

1998:208621 Document No. 128:235001 Skin care compositions containing esterquats and sterols. Ansmann, Achim; **Fabry**, Bernd (Henkel K.-G.a.A., Germany). Ger. DE 19652302 Cl 19980326, 8 pp. (German). CODEN: GWXXAW. APPLICATION: DE 1996-19652302 19961216.

AB Skin-conditioning compns. contg. sterols 0.01-3, oils 1-90, and esterquats

0.1-10 wt.% as cationic emulsifiers form oil-in-water emulsions which are stable during storage at elevated temps. Thus, an emulsion contg. Me-quaternized ditallow fatty acid triethanolamine ester methosulfate 5.0, ceteareth-20 5.0, cetearyl glucoside + cetearyl alc. 5.0, **phytosterols** 1.0, coco glycerides 10.0, oleyl oleate 6.0, almond oil 2.0, 86% glycerin 3.0, and water to 100 wt.% had a viscosity of 20.0 Pa s immediately after prepn. and 19.5 Pa s after 2 days storage at 35.degree..

L85 ANSWER 7 OF 7 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD

AN 1998-313690 [28] WPIDS
Prepared by M. Hale 308-4258

AB DE 19700796 A UPAB: 19980715

Use of an active agent mixture (I) for the preparation of hypocholesterolaemic agents, is new.

(I) comprises (A) **phytosterols** and/or **phytosterol** esters and (B) potentiating agents selected from tocopherols, chitosans, **phytosterol** sulphates and/or (deoxy)ribonucleic acids.

Also claimed is the use of gelatin for encapsulating (A) or (I).

USE - (I) is preferably administered orally in gelatin capsules, but may also be used in rectal or vaginal suppositories or dissolved or dispersed in foodstuffs.

ADVANTAGE - (B) (which themselves have no hypocholesterolaemic activity) potentiate and accelerate the action of (A) in reducing serum cholesterol levels.

Encapsulation of (I) or (A) in gelatin allows oral administration without prior art problems of taste and/or consistency.

Dwg.0/0

=> s (anticholesterem? or hypocholesterem? or (d10.162.202 or d27.505.519.162.202)/ct)

L86 5020 FILE MEDLINE
L87 7670 FILE CAPLUS
L88 83 FILE BIOSIS
L89 53 FILE EMBASE
L90 138 FILE WPIDS
L91 102 FILE JICST-EPLUS
'CT' IS NOT A VALID FIELD CODE
L92 0 FILE CONF
L93 1 FILE NTIS

TOTAL FOR ALL FILES

L94 13067 (ANTICHOLESTEREM? OR HYPOCHOLESTEREM? OR (D10.162.202 OR D27.505
.519.162.202)/CT)

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L96 131 FILE CAPLUS
L97 2 FILE BIOSIS
L98 1 FILE EMBASE
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LEFT TRUNCATION IGNORED FOR '?SITOSTEROL?' FOR FILE 'WPIDS'
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L99 4 FILE WPIDS
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L101 0 FILE CONF
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'CNS' IS NOT A VALID FIELD CODE

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LEFT TRUNCATION IGNORED FOR '?PHYTOSTEROL?' FOR FILE 'NTIS'
L102 0 FILE NTIS

TOTAL FOR ALL FILES

L103 225 (L1 OR L3 OR L5 OR L6 OR PHYTOSTE!OL? OR SITOSTE!OL? OR
SITOSTA!
OL?) AND L94

Left truncation is not valid in the specified search field in the
specified file. The term has been searched without left truncation.
Examples: '?TERPEN?' would be searched as 'TERPEN?' and '?FLAVONOID'
would be searched as 'FLAVONOID.'

If you are searching in a field that uses implied proximity, and you
used a truncation symbol after a punctuation mark, the system may
interpret the truncation symbol as being at the beginning of a term.
Implied proximity is used in search fields indexed as single words,
for example, the Basic Index.

=> s 1103 and (treat? or therap? or lower? or reduc?) and serum cholesterol

L104 21 FILE MEDLINE
L105 22 FILE CAPLUS
L106 1 FILE BIOSIS
L107 0 FILE EMBASE
COMMAND INTERRUPTED
L108 0 FILE JICST-EPLUS
L109 0 FILE CONF
L110 0 FILE NTIS

TOTAL FOR ALL FILES

L111 44 L103 AND (TREAT? OR THERAP? OR LOWER? OR REDUC?) AND SERUM
CHOLE
STEROL

If this message appears repeatedly, please notify the Help Desk.
Enter "HELP STN" for information on contacting the nearest STN Help
Desk by telephone or via SEND in the STNMAIL file.

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ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L111
L112 40 DUP REM L111 (4 DUPLICATES REMOVED)

=> d 1-40 cbib abs

L112 ANSWER 1 OF 40 CAPLUS COPYRIGHT 2000 ACS
2000:367057 Document No. 133:17688 Preparation of phytosterol
and/or phytostanol derivatives for redn. of serum
Prepared by M. Hale 308-4258

cholesterol and triglycerides. Burdick, David Carl; Moine, Gerard; Raederstorff, Daniel; Weber, Peter (F. Hoffmann-La Roche A.-G., Switz.). Eur. Pat. Appl. EP 1004594 A1 20000531, 11 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1999-122978 19991119. PRIORITY: EP 1998-122412 19981126; EP 1999-119337 19990929.

AB Phytosterol and/or phytostanol esters with polyunsatd. fatty acids having from 18 to 22 carbon atoms and at least three carbon-carbon double bonds are were prep'd. as agents effective in **reducing** both **serum cholesterol** and triglycerides. Thus, .91 g docosahexaenoic acid was **treated** with 1.03 g stigmasterol in presence of dimethylaminopyridine in CH₂C₁₂ to give 1.0 g stigmasterol docosahexaenoate as an oil.

L112 ANSWER 2 OF 40 MEDLINE

DUPLICATE 1

2000270456 Document Number: 20270456. Noncholesterol sterols and cholesterol

lowering by long-term simvastatin **treatment** in coronary patients: relation to basal serum cholestanol. Miettinen T A; Strandberg

T

E; Gylling H. (Department of Medicine, University of Helsinki, Helsinki, Finland.. tatu.a.miettinen@helsinki.fi) . ARTERIOSCLEROSIS, THROMBOSIS, AND VASCULAR BIOLOGY, (2000 May) 20 (5) 1340-6. Journal code: B89. ISSN: 1079-5642. Pub. country: United States. Language: English.

AB Coronary patients with low baseline ratios of serum cholestanol and plant sterols to cholesterol (indicating low cholesterol absorption) but not those with high ratios (high absorption) experienced **reduced** recurrences of coronary events during simvastatin **treatment** in the Scandinavian Simvastatin Survival Study. Thus, in the present study, **serum cholesterol**, its precursor sterols (reflecting cholesterol synthesis), plant sterols (campesterol and **sitosterol**), and cholestanol were measured before and during a 5-year period of placebo **treatment** (n=433) ~~and~~ simvastatin **treatment** (n=434) in patients from a subgroup of the Scandinavian Simvastatin Survival Study to determine whether changes in cholesterol synthesis and serum levels were related to cholesterol absorption. Serum **cholesterol** level was unchanged, the ratios of cholesterol precursor sterols to cholesterol were decreased, and the ratios of plant sterols to cholesterol were increased in relation to increasing baseline ratios of cholestanol quartiles. The latter predicted 5-year ratios and simvastatin-induced **reductions** of the precursor sterols, with the **lowering** of the ratios (cholesterol synthesis **reduction**) being almost twice higher in the lowest versus the highest quartile. The ratios of plant sterols, especially campesterol, to cholesterol were markedly increased during simvastatin **treatment**, mostly in subjects with the highest baseline cholestanol quartiles. Simvastatin **reduced serum cholesterol** more (P=0.003) in the lowest versus the highest cholestanol quartile during the

5-year **treatment** period. The results show for the first time that baseline cholesterol metabolism, measured by serum noncholesterol sterols, predicts the effectiveness of simvastatin in **reducing** cholesterol synthesis and serum levels of cholesterol. The drug suppresses

the synthesis of cholesterol markedly more effectively in subjects with
Prepared by M. Hale 308-4258 Page 20

high than with low baseline synthesis but **reduces** respective serum cholesterol levels less markedly than synthesis. Subjects with high cholesterol absorption and low synthesis may need a combination **therapy** to **lower** more effectively their serum cholesterol levels and prevent an increase in the levels of plant sterols.

L112 ANSWER 3 OF 40 MEDLINE

2000197829 Document Number: 20197829. Soy sterol esters and beta-sitostanol ester as inhibitors of cholesterol absorption in human small bowel. Normen L; Dutta P; Lia A; Andersson H. (Department of Clinical Nutrition, Annedalsklinikerna, Goteborg University, Goteborg, Sweden.. nutrition@clinnutr.gu.se) . AMERICAN JOURNAL OF CLINICAL NUTRITION, (2000 Apr) 71 (4) 908-13. Journal code: 3EY. ISSN: 0002-9165. Pub. country: United States. Language: English.

AB BACKGROUND: Plant sterols are natural dietary components with serum cholesterol-lowering properties. The lowering of serum cholesterol by plant sterols is believed to be the result of an inhibition of cholesterol absorption

in the small bowel, although increased bile acid excretion has also been suggested. The difference in effect of saturated and unsaturated plant sterols on cholesterol absorption needs to be elucidated further.

OBJECTIVE: The primary aim of this study was to measure small-bowel cholesterol absorption and sterol excretion in addition to hepatic cholesterol synthesis after intake of soy sterol esters and beta-sitostanol ester corresponding to 1.5 g plant sterols/d. DESIGN: Seven ileostomy subjects were studied during a control period and 2 intervention periods when either soy sterol esters or beta-sitostanol ester was added to a basal diet. Ileostomy bags were collected every other hour and frozen immediately for analysis of nutrients and sterols. RESULTS: Cholesterol absorption was 56% (43-65%)

in the control period and decreased to 38% (32-46%) in the soy sterol ester period ($P = 0.00$) and to 39% (30-48%) in the beta-sitostanol ester period ($P = 0.00$). CONCLUSION: Esterified soy sterols and beta-sitostanol inhibited cholesterol absorption equally, despite the different structures of the plant sterols.

L112 ANSWER 4 OF 40 MEDLINE

2000202391 Document Number: 20202391. Plant stanol esters affect serum cholesterol concentrations of hypercholesterolemic men and women in a dose-dependent manner. Hallikainen M A; Sarkkinen E S; Uusitupa M I. (Department of Clinical Nutrition, University of Kuopio, 70211 Kuopio, Finland.) JOURNAL OF NUTRITION, (2000 Apr) 130 (4) 767-76. Journal code: JEV. ISSN: 0022-3166. Pub. country: United States.

Language:

English.

AB The effect of plant stanol ester on serum cholesterol is dose-dependent. However, it is not clear what the dose is beyond which no additional benefit can be obtained. Therefore, we determined the dose-response relationship for serum cholesterol with different doses of plant stanol ester in hypercholesterolemic subjects.

In

a single-blind design each of 22 men or women consumed five different doses of plant stanol [target (actual) intake 0 (0), 0.8 (0.8), 1.6 (1.6), Prepared by M. Hale 308-4258 Page 21

2.4 (2.3), 3.2 (3.0) g/d] added as plant stanol esters to margarine for 4 wk. The order of dose periods was randomly determined. Serum total cholesterol concentration decreased (calculated in reference to control) by 2.8% (P = 0.384), 6.8% (P < 0.001), 10.3% (P < 0.001) and 11.3% (P < 0.001) by doses from 0.8 to 3.2 g. The respective decreases for LDL cholesterol were 1.7% (P = 0.892), 5.6% (P < 0.05), 9.7% (P < 0.001) and 10.4% (P < 0.001). Although the decreases were numerically greater with 2.4 and 3.2 g doses than with the 1.6 g dose, these differences were not significant (P = 0.054-0.516). Serum plant stanols rose slightly, but significantly with the dose (P < 0.001). Apolipoprotein B concentration was decreased significantly already at the dose of 0.8 g (8.7%, P < 0.001). Apolipoprotein E genotype did not affect the lipid responses. We conclude that significant **reduction** of serum total and LDL cholesterol concentrations is reached with the 1.6-g stanol dose, and increasing the dose from 2.4 to 3.2 g does not provide clinically important additional effect.

L112 ANSWER 5 OF 40 MEDLINE

DUPLICATE 2

2000136131 Document Number: 20136131. Stanol ester margarine alone and with simvastatin **lowers serum cholesterol** in families with familial hypercholesterolemia caused by the FH-North Karelia

mutation. Vuorio A F; Gylling H; Turtola H; Kontula K; Ketonen P; Miettinen T A. (Department of Medicine, University of Helsinki, Helsinki, Finland.. alpo.vuorio@huch.fi) . ARTERIOSCLEROSIS, THROMBOSIS, AND VASCULAR BIOLOGY, (2000 Feb) 20 (2) 500-6. Journal code: B89. ISSN: 1079-5642. Pub. country: United States. Language: English.

AB In heterozygous familial hypercholesterolemia (FH), serum low density lipoprotein (LDL) cholesterol levels are already elevated at birth. Premature coronary heart disease occurs in approximately 30% of heterozygous untreated adult patients. Accordingly, to retard development of atherosclerosis, preventive measures for **lowering** cholesterol should be started even in childhood. To this end, 19 FH families consumed dietary stanol ester for 3 months. Stanol ester margarine **lowers** the **serum cholesterol** level by inhibiting cholesterol absorption. Each individual in the study replaced part of his or her

daily

dietary fat with 25 g of 80% rapeseed oil margarine containing stanol esters (2.24 g/d stanols, mainly **sitostanol**). The families who consumed this margarine for 12 weeks included 24 children, aged 3 to 13 years, with the North Karelia variant of FH (FH-NK), 4 FH-NK parents, and 16 healthy family members, and a separate group of 12 FH-NK adults who consumed the margarine for 6 weeks and who were on simvastatin **therapy** (20 or 40 mg/d). Fat-soluble vitamins were measured by high-pressure liquid chromatography, and cholesterol precursor sterols (indexes of cholesterol synthesis) and cholestanol and plant sterols (indexes of cholesterol absorption efficiency) were assayed by gas-liquid chromatography. No side effects occurred. Serum LDL cholesterol levels were **reduced** by 18% (P<0.001), 11%, 12% (P<0.001), and 20% (P<0.001) in the 4 groups, respectively. The serum campesterol-to-cholesterol ratios fell by 31% (P<0.001), 29%, 23% (P<0.001), and 36% (P<0.001), respectively, suggesting that cholesterol absorption

efficiency

was inhibited. Serum lathosterol ratios were elevated by 38% (P<0.001), 11%, 15% (P<0.001), and 19% (P<0.001), respectively, suggesting that cholesterol synthesis was compensatorily upregulated. The FH-NK children

increased their serum lathosterol ratio more than did the FH-NK adults treated with stanol ester margarine and simvastatin ($P<0.01$). In the FH-NK children, serum retinol concentration and alpha-tocopherol-to-cholesterol ratios were unchanged by stanol ester margarine, but alpha- and beta-carotene concentrations and ratios were decreased. As assayed in a genetically defined population of FH patients, a dietary regimen with stanol ester margarine proved to be a safe and effective hypolipidemic treatment for children and adults. In FH-NK adults on simvastatin therapy, serum LDL cholesterol levels could be reduced even further by including a stanol ester margarine in the regimen.

L112 ANSWER 6 OF 40 MEDLINE

2000002453 Document Number: 20002453. Plant lipids that lower serum cholesterol [editorial]. Thompson G R. EUROPEAN HEART JOURNAL, (1999 Nov) 20 (21) 1527-9. Journal code: EM8. ISSN: 0195-668X. Pub. country: ENGLAND: United Kingdom. Language: English.

L112 ANSWER 7 OF 40 CAPLUS COPYRIGHT 2000 ACS

1999:529029 Document No. 131:149329 Composition for reducing serum cholesterol levels. Sorkin, Harlan Lee, Jr. (USA). PCT Int. Appl. WO 9940922 A1 19990819, 10 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1999-US3003 19990212. PRIORITY: US 1998-22807 19980212.

AB A compn. for reducing serum cholesterol in humans and animals is provided. The compn. includes phytosterol and policosanol which together produce a synergistic effect in lowering serum cholesterol levels. Preferably the compn. includes about 3.2:1 parts by wt. of phytosterol and policosanol. A tablet contained cholestanol (.gtoreq.88 % phytosterols) 250, rice bran wax (23-33 % policosanol) 250, Ca phosphate 261.7, cellulose 49.4, stearic acid 23.8, Mg stearate 6.8, and silica 9.4 mg.

L112 ANSWER 8 OF 40 CAPLUS COPYRIGHT 2000 ACS

1999:404806 Document No. 131:49483 Sterol esters as food additives. Milstein, Norman; Biermann, Manfred; Leidl, Peter; Von Kreis, Rainer (Henkel Corporation, USA). PCT Int. Appl. WO 9930569 A1 19990624, 38 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN,

CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1998-US26212 19981215. PRIORITY: US 1997-69790 19971216; US

1998-72434

19980504; US 1998-83584 19980521.

AB A food additive useful for lowering serum

cholesterol in humans contains a sterol or stanol ester of a fatty acid. Prepared by M. Hale 308-4258 Page 23

acid or a dicarboxylic acid ester of a sterol or stanol made by reacting a sterol, stanol and a carboxylic acid in the presence of an effective amt. of a catalyst selected from the group consisting of calcium oxide, calcium hydroxide, a calcium salt of a carboxylic acid, magnesium hydroxide and combinations thereof described herein.

L112 ANSWER 9 OF 40 MEDLINE

2000069312 Document Number: 20069312. Effects of low-fat stanol ester enriched margarines on concentrations of serum carotenoids in subjects with elevated serum cholesterol concentrations.

Hallikainen M A; Sarkkinen E S; Uusitupa M I. (Department of Clinical Nutrition, University of Kuopio, Kuopio, Finland..
Maarit.Hallikainen@uku.fi) . EUROPEAN JOURNAL OF CLINICAL NUTRITION, (1999

Dec) 53 (12) 966-9. Journal code: EJC. ISSN: 0954-3007. Pub. country: ENGLAND: United Kingdom. Language: English.

AB OBJECTIVE: To investigate the effects of low-fat stanol ester margarines on concentrations of serum carotenoids. DESIGN: A randomized parallel double-blind study design consisting of a 4-week run-in (high-fat diet) and an 8-week experimental (low-fat, low-cholesterol diet) period. During the experimental diet period subjects consumed low-fat wood stanol ester (WSEM), vegetable oil stanol ester (VOSEM) or control (no stanol esters) margarine daily. The daily mean total stanol intake was 2.31 and 2.16 g

in the WSEM and VOSEM groups, respectively. SETTING: Outpatient clinical trial with free-living subjects. SUBJECTS: Altogether, 60 hypercholesterolaemic subjects were selected for the study out of 91 originally screened. The study was completed by 55 subjects. MAIN

OUTCOMES

MEASURES: Serum alpha- and beta-carotene and lycopene determined by the HPLC. RESULTS: Serum alpha-carotene concentration did not change significantly in either of the experimental groups, whereas beta-carotene concentration decreased significantly in the WSEM and VOSEM groups ($P < 0.01$), and the change differed significantly ($P < 0.05$ and $P < 0.01$, respectively) from that of the control group. Decrease in alpha+beta-carotene concentration was significantly greater ($P < 0.05$) in both experimental groups than in the control group. However, the change

in alpha-, beta- or alpha+beta-carotene/total cholesterol ratio did not differ significantly among the groups. No significant changes were found in serum lycopene or lycopene/total cholesterol ratio in both experimental groups. CONCLUSIONS: Low-fat stanol ester margarines appeared to have little effect on serum concentrations of alpha-, beta- or alpha + beta-carotene, or lycopene. SPONSORSHIP: Grant to the University of

Kuopio

by Raisio Benecol Ltd, Raisio, Finland.

L112 ANSWER 10 OF 40 MEDLINE

2000007614 Document Number: 20007614. Sitostanol administered in lecithin micelles potently reduces cholesterol absorption in humans. Ostlund R E Jr; Spilburg C A; Stenson W F. (Division of Endocrinology, Washington University, St Louis, MO, USA..

ROstlund@imgate.wustl.edu) . AMERICAN JOURNAL OF CLINICAL NUTRITION, (1999 Prepared by M. Hale 308-4258 Page 24

Nov) 70 (5) 826-31. Journal code: 3EY. ISSN: 0002-9165. Pub. country: United States. Language: English.

AB BACKGROUND: **Phytosterol** feeding in human clinical trials has had generally small and inconsistent effects on **serum cholesterol** concentrations, raising doubts about the importance of **phytosterols** in natural diets and supplements. OBJECTIVE: The hypothesis tested was that the low intestinal bioavailability of purified **phytosterols** can be increased by formulation with lecithin. DESIGN: The ability of **sitostanol** to **reduce** cholesterol absorption was measured directly by including hexadeuterated cholesterol tracer in a standard test breakfast and measuring plasma tracer concentration 4 and 5 d later by gas chromatography-negative ion mass spectrometry. The tracer amount after a test meal containing **sitostanol** was compared with that after an identical meal containing placebo. Each subject served as his or her own control and the order of testing was random. **Sitostanol** was formulated either as a powder or as a sonicated micellar solution with lecithin. A total of 38 single-meal tests were performed in 6 healthy subjects. RESULTS: **Sitostanol** powder (1 g) **reduced** cholesterol absorption by only 11.3 +/- 7.4% (P = 0.2), confirming in vitro data showing poor solubility of **sitostanol** powder in artificial bile. In contrast, **sitostanol** in lecithin micelles **reduced** cholesterol absorption by 36.7 +/- 4.2% (P = 0.003) at a dose of 700 mg and by 34.4 +/- 5.8% (P = 0.01) at a dose of 300 mg. CONCLUSIONS: **Sitostanol** **reduced** cholesterol absorption at doses **lower** than reported previously, but only if presented in lecithin micelles. Properly formulated **sitostanol** as well as naturally occurring complexes of **phytosterol** and phospholipid might be **therapeutically** useful for cholesterol **lowering**.

L112 ANSWER 11 OF 40 MEDLINE

1999208729 Document Number: 99208729. Serum sterols during stanol ester feeding in a mildly hypercholesterolemic population. Gylling H; Puska P; Vartiainen E; Miettinen T A. (Department of Medicine, University of Helsinki, P.O. Box 340, FIN-00029 HYKS, Helsinki, Finland.) JOURNAL OF LIPID RESEARCH, (1999 Apr) 40 (4) 593-600. Journal code: IX3. ISSN: 0022-2275. Pub. country: United States. Language: English.

AB We investigated the changes of cholesterol and non-cholesterol sterol metabolism during plant stanol ester margarine feeding in 153 hypercholesterolemic subjects. Rapeseed oil (canola oil) margarine without

(n = 51) and with (n = 102) stanol (2 or 3 g/day) ester was used for 1 year. Serum sterols were analyzed with gas-liquid chromatography. The latter showed a small increase in **sitostanol** peak during stanol ester margarine eating. Cholestanol, campesterol, and **sitosterol** proportions to cholesterol were significantly **reduced** by 5-39% (P < 0.05 or less for all) by stanol esters; the higher their baseline proportions the higher were their **reductions**. The precursor sterol proportions were significantly increased by 10- 46%, and their

high baseline levels predicted low **reduction of serum cholesterol**. The decrease of the scheduled stanol dose from 3 to 2 g/day after 6-month feeding increased **serum cholesterol** by 5% (P < 0.001) and serum plant sterol proportions by 8-13% (P < 0.001), but had no consistent effect on precursor sterols. In twelve subjects, the 12-month level of LDL cholesterol exceeded that of baseline; Prepared by M. Hale 308-4258 Page 25

the non-cholesterol sterol proportions suggested that stimulated synthesis

with relatively weak absorption inhibition contributed to the non-responsiveness of these subjects. In conclusion, plant stanol ester feeding lowers serum cholesterol in about 88% of subjects, decreases the non-cholesterol sterols that reflect cholesterol absorption, increases the sterols that reflect cholesterol synthesis, but also slightly increases serum plant stanols. Low synthesis and high absorption efficiency of cholesterol results in the greatest benefit from stanol ester consumption.

L112 ANSWER 12 OF 40 MEDLINE

1999268178 Document Number: 99268178. Cholesterol reduction by different plant stanol mixtures and with variable fat intake. Gylling H; Miettinen T A. (Department of Medicine, University of Helsinki, Finland.

) METABOLISM: CLINICAL AND EXPERIMENTAL, (1999 May) 48 (5) 575-80. Journal code: MUM. ISSN: 0026-0495. Pub. country: United States. Language: English.

AB Our aim was to investigate (1) whether different campestanol/sitostanol mixtures in margarine differ in reducing serum cholesterol, and (2) whether sitostanol ester in butter decreases serum cholesterol and alters cholesterol absorption and metabolism. Twenty-three postmenopausal women replaced 25 g dietary fat with (1) sitostanol ester-rich (campestanol to sitostanol ratio 1:11) and (2) campestanol ester-rich (campestanol to sitostanol ratio 1:2) rapeseed oil margarine, (3) butter, and (4) sitostanol ester-rich (campestanol to sitostanol ratio 1:13) butter. The respective scheduled stanol intake was 3.18, 3.16, and 2.43 g/d. The 6-week margarine

periods and, after an 8-week washout, 5-week butter periods were double-blind and in random order. Serum cholesterol precursor sterols (indicators of cholesterol synthesis) and plant sterols (indicators of cholesterol absorption) were quantified with gas-liquid chromatography (GLC). Low-density lipoprotein (LDL) cholesterol was reduced by 8% and 10% with the sitostanol and campestanol ester-rich margarines versus baseline ($P < .05$ for both) and high-density lipoprotein (HDL) cholesterol was increased by 6% and 5% (P

< .05), so the LDL/HDL cholesterol ratio was reduced by 15% ($P < .05$ for both). Sitostanol ester-rich butter decreased LDL cholesterol 12% and the LDL/HDL cholesterol ratio 11% ($P < .05$ for both) versus the butter period. The serum proportions of plant sterols and cholestanol were similarly reduced and those of cholesterol precursor sterols were similarly increased during all periods ($P < .05$

for all). Serum proportions of sitostanol and campestanol were slightly increased, indicating that their absorption related to their dietary intake. During all stanol interventions, serum vitamin D and retinol concentrations and alpha-tocopherol to cholesterol ratios were unchanged, whereas those of alpha- and beta-carotenes were significantly reduced. We conclude that varying the campestanol to sitostanol ratio from 1:13 to 1:2 in margarine and in butter similarly decreased cholesterol absorption, LDL cholesterol, and the LDL/HDL cholesterol ratio such that the serum lipids became less

atherogenic.

L112 ANSWER 13 OF 40 CAPLUS COPYRIGHT 2000 ACS

1999:244965 Document No. 130:295803 **Sitostanol** content in *Setaria italica* Beauv. seeds and milled grains. Abe, Bunichi; Itokawa, Emiko; Takatsuto, Suguru (Dep. Chem., Joetsu Univ. Educ., Joetsu, 943-8512, Japan). Nippon Nogei Kagaku Kaishi, 73(4), 419-421 (Japanese) 1999. CODEN: NNKKA. ISSN: 0002-1407. Publisher: Nippon Nogei Kagakkai.

AB From the nutritional point of view, it is known that **sitostanol** inhibits cholesterol absorption and **lowers** the level of **serum cholesterol**. The **sitostanol** content in *Setaria italica* Beauv. seeds and milled grain lipids was measured by GC anal. The result showed that each sample had a high content of **sitostanol**, ranging from 13 to 41 mg/100 g seeds or milled grains (27.6 mg, av., n = 9). No difference was found in **sitostanol** content between seeds and milled grains, suggesting that **sitostanol** is not localized in the aleurone layer, but distributed uniformly in the seeds. It was also found that **sitostanol** occurred mainly in free lipid. Nutritionally, *S. italica* milled grains are good food materials.

L112 ANSWER 14 OF 40 MEDLINE

1999173645 Document Number: 99173645. Effects of 2 low-fat stanol ester-containing margarines on **serum cholesterol** concentrations as part of a low-fat diet in hypercholesterolemic subjects.

Hallikainen M A; Uusitupa M I. (Department of Clinical Nutrition, University of Kuopio, Finland.. Maarit.Hallikainen@uku.fi) . AMERICAN JOURNAL OF CLINICAL NUTRITION, (1999 Mar) 69 (3) 403-10. Journal code: 3EY. ISSN: 0002-9165. Pub. country: United States. Language: English.

AB BACKGROUND: Full-fat **sitostanol** ester-containing margarine **reduces** serum total and LDL cholesterol, but the effect of plant stanol ester-containing margarine as part of a low-fat, low-cholesterol diet has not been studied. OBJECTIVE: We investigated the cholesterol-lowering effects of 2 novel, low-fat stanol ester-containing margarines as part of a low-fat diet recommended for hypercholesterolemic subjects. DESIGN: In a parallel, double-blind study, 55 hypercholesterolemic subjects were randomly assigned after a 4-wk high-fat diet (baseline) to 3 low-fat margarine groups: wood stanol ester-containing margarine (WSEM), vegetable oil stanol ester-containing margarine (VOSEM), and control margarine (no stanol esters). The groups consumed the margarines for 8 wk as part of a diet resembling that of the National Cholesterol Education Program's Step II diet. The daily mean total stanol intake was 2.31 and 2.16 g in the WSEM and VOSEM groups, respectively. RESULTS: During the experimental period, the reduction in serum total cholesterol was 10.6% (P < 0.001) and 8.1% (P < 0.05) greater and in LDL cholesterol was 13.7% (P < 0.01) and 8.6% (P = 0.072) greater in the WSEM and VOSEM groups, respectively, than in the control group. Serum campesterol concentrations decreased 34.5% and 41.3% (P < 0.001) in the WSEM and VOSEM groups, respectively. Serum HDL cholesterol, **sitostanol**, campestanol, beta-carotene, and fat-soluble vitamin concentrations did not change significantly from baseline. CONCLUSIONS: We conclude that the low-fat, plant stanol ester-containing margarines are effective cholesterol-lowering

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products in hypercholesterolemic subjects when used as part of a low-fat, low-cholesterol diet. They offer an additional, clinically significant reduction in serum cholesterol concentrations to that obtained with a low-fat diet alone.

L112 ANSWER 15 OF 40 MEDLINE

1999417057 Document Number: 99417057. Retinol, vitamin D, carotenes and alpha-tocopherol in serum of a moderately hypercholesterolemic population consuming sitostanol ester margarine. Gylling H; Puska P; Vartiainen E; Miettinen T A. (Department of Medicine, University of Helsinki, Finland.) ATHEROSCLEROSIS, (1999 Aug) 145 (2) 279-85. Journal code: 95X. ISSN: 0021-9150. Pub. country: Ireland. Language: English.

AB We have shown earlier that sitostanol ester margarine lowers serum cholesterol by inhibiting cholesterol absorption so that, theoretically, there could be interference

with the absorption of fat-soluble vitamins. Accordingly, we investigated whether sitostanol ester margarine affects the serum levels of vitamin D, retinol, alpha-tocopherol and alpha- and beta-carotenes during 1-year treatment in 102 subjects and 49 controls with moderate hypercholesterolemia. The vitamins were assayed at baseline on home diet, on margarine alone, after 1 year's consumption of sitostanol ester margarine and after an additional 2 months on home diet. In the sitostanol group, serum plant sterols, indicators of cholesterol absorption efficiency, were reduced up to -38% in relation to controls from home diet ($P < 0.01$) indicating that cholesterol absorption was markedly reduced. Vitamin D and retinol concentrations and the ratio of alpha-tocopherol to cholesterol were unchanged by sitostanol ester. Serum beta-carotenes and alpha-carotene concentration but not proportion were reduced in the sitostanol group from baseline and in relation to controls ($P < 0.01$). Retinol and vitamin D were unassociated with serum cholesterol, plant sterols or other vitamins, whereas alpha-tocopherol and carotenes were significantly associated with serum plant sterols suggesting that the higher cholesterol absorption efficiency, the higher the alpha-tocopherol and carotene levels in serum. We conclude that sitostanol ester did not affect vitamin D and retinol concentrations and alpha-tocopherol/cholesterol proportion, but reduced serum beta-carotene levels. Alpha-tocopherol and carotenes, but not vitamin D and retinol, were related to serum cholesterol and cholesterol absorption.

L112 ANSWER 16 OF 40 CAPLUS COPYRIGHT 2000 ACS

1999:792367 Document No. 132:11900 Stanol esters in the treatment of hypercholesterolemia. Miettinen, T. A. (Department of Medicine, University of Helsinki, Helsinki, FIN-00029, Finland). Eur. Heart J. Suppl., 1(Suppl. S), S50-S57 (English) 1999. CODEN: EHJSFT. ISSN: 1520-765X. Publisher: W. B. Saunders Co. Ltd..

AB Aims: The extent and mechanisms of serum cholesterol lowering were studied by feeding mayonnaise and margarine without or with fortification with fat-sol. stanol esters to patients with mild hypercholesterolemia. Methods and Results: Double-blind, randomized, controlled studies were performed before and during feeding of mayonnaise or margarine with or without addn. of stanol esters to 242 mildly hypercholesterolemic participants. Serum lipids, ratios of non-cholesterol sterols to cholesterol, cholesterol absorption, and fecal

elimination and synthesis of cholesterol were quantified. Replacement of home dietary fat with mayonnaise or margarine without stanol esters lowered serum total cholesterol levels by 5-9%. Total and low-d. lipoprotein (LDL) cholesterol levels were lowered up to 15% and 20%, resp., from home-diet values after feeding stanol ester margarine. Triglycerides and high-d. lipoprotein (HDL) cholesterol levels were unchanged. Cholesterol absorption efficiency and cholestanol and plant sterol ratios were decreased by up to 45% and resulted in proportionately enhanced elimination of cholesterol in stool as cholesterol but not as bile acids. Cholesterol synthesis and cholesterol precursor sterol ratios

were increased compensatorily by more than 20%, a factor limiting the decrease of LDL cholesterol. Serum levels of vitamins A, E, D and .alpha.-carotene or ratios to cholesterol were not changed, but the .beta.-carotene ratio was decreased during 1-yr of stanol ester margarine feeding. Conclusion: Stanol ester margarine is a well-tolerated food ingredient that lowers serum total cholesterol levels by about 15% and LDL cholesterol levels by about 20% from home-diet values. Current hypocholesterolemic diets that include stanol ester margarine can normalize serum LDL cholesterol in more than half of participants; the rest may require combination treatment with statins.

L112 ANSWER 17 OF 40 CAPLUS COPYRIGHT 2000 ACS

1998:323105 Document No. 129:15518 Texturizing compositions for use in fat blends in food. Wester, Ingmar (Raisio Yhtyma Oy, Finland; Wester, Ingmar). PCT Int. Appl. WO 9819556 A1 19980514, 41 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1997-FI669 19971103. PRIORITY: US 1996-740845 19961104.

AB Fatty acid esters, such as the unsatd. fatty acid esters of sterols and/or

stanols, are used as a replacement for a substantial portion or all of the

undesirable satd. and trans-unsatd. fats used as structure giving hardstocks in edible foods such as margarines, mayonnaise, cooking oils, cheeses, butter and shortening. Because of the similarity in the crystallinity and phys. properties of the esters to those of the undesirable hardstock fats, the substitution or replacement contributes favorably to the flavor, texture and other sensory properties of the foods. Only the fatty acid portion of the phytosterol esters defined herein as texturizing agent is digested or absorbed with the sterol part being unabsorbable, thereby resulting in a redn. in total caloric uptake. Furthermore, the phytosterol fatty acid esters reduce the absorption of both dietary and biliary cholesterol from the digestive tract, thereby lowering the blood serum cholesterol level, esp. the LDL-cholesterol.

L112 ANSWER 18 OF 40 CAPLUS COPYRIGHT 2000 ACS

1998:124016 Document No. 128:191937 Stanol composition and the use thereof. Wester, Ingmar; Palmu, Tapio; Miettinen, Tatu; Gylling, Helena (Raisio Tehtaat Oy AB, Finland; Wester, Ingmar; Palmu, Tapio; Miettinen, Tatu; Prepared by M. Hale 308-4258 Page 29

Gylling, Helena). PCT Int. Appl. WO 9806405 A1 19980219, 29 pp.
DESIGNATED STATES: W: AT, AU, AZ, BG, BR, BY, CA, CH, CN, CU, CZ, DE,
DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KP, KR, KZ, LK, LT, LU, LV, MD,
MK, MN, MX, NO, NZ, PL, PT, RO, RU, SE, SG, SI, SK, TJ, TM, TR, UA, US,
UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG,
CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE,
NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO
1996-FI465 19960902. PRIORITY: FI 1996-3126 19960809.
AB A stanol compn. contg. in addn. to **sitostanol** as the main
component, also a substantial amt. of at least 10 % campestanol
effectively **lowers serum cholesterol** levels
when incorporated in edible commodities. Upon esterification the compn.
is esp. useful in edible fats and oils and in fat-contg. foods. A
vegetable oil distillate (brassicasterol 2.7, campesterol 26.7,
stigmasterol 18.4, **sitosterol** 49.1, and **sitostanol** 2.9
) was hydrogenated and esterified with rapeseed oil Me ester.
Margarines
were produced using the above product.

L112 ANSWER 19 OF 40 MEDLINE
1999058324 Document Number: 99058324. [Is the Finnish "healthy margarine"
food or medicine? Addition of plant sterols can **lower**
cholesterol levels]. Ar det finska "halsomargarinet" mat eller medicin?
Tillsats av vaxtsteroler kan sanka hoga kolesterolvarden. Wikstrom A C.
(Karolinska institutet, enheten for preventiv nutrition, Huddinge
sjukhus.
) LAKARTIDNINGEN, (1998 Nov 11) 95 (46) 5146-8. Ref: 18. Journal code:
LON. ISSN: 0023-7205. Pub. country: Sweden. Language: Swedish.
AB Since the autumn of 1995, Benecol, a proprietary brand of cholesterol-
lowering margarine, has been available in ordinary grocery shops
in Finland. The active ingredient is a **sitostanol** ester. Several
studies in humans have shown use of the margarine to result in an
approximately 10 per cent **reduction** in total **serum**
cholesterol, and a 13-15 per cent **reduction** of
LDL-cholesterol. However, further studies are required of its
phyto-oestrogenic and endocrine effects, and its effects on growing
children, particularly regarding subsequent fertility in boys. Although
the margarine is classed as a 'functional food' in Finland, the question
arises where the line is to be drawn between medicines and food-stuffs.

L112 ANSWER 20 OF 40 CAPLUS COPYRIGHT 2000 ACS
1999:52146 Document No. 130:261865 **Serum cholesterol**
lowering effects of the **phytosterol** derivative (LPSS) in
rats. Che, Jeong-Hwan; Chung, Dae-Won; Noh, Seung-Kwon; Lee, Yong-Soon;
Park, Jae-Hak (Department of Veterinary Public Health, College of
Veterinary Medicine, Seoul National University, Suwon, 441-744, S.
Korea).

J. Toxicol. Public Health, 14(4), 535-539 (Korean) 1998. CODEN: JTPHFT.
ISSN: 1226-8399. Publisher: Korean Society of Toxicology.
AB The present study was designed to investigate the **serum**
cholesterol **lowering** effect of the **phytosterol**
deriv. (LPSS) on high cholesterol (HC) diet-induced hypercholesterolemia
in male weaning Sprague-Dawley (SD) rats. Rats were fed with HC diet
contg. 1% cholesterol and 0.5% cholic acid for 1 wk. After 1 wk, the

LPSS

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oil suspension (0.32 g/kg B.W.) was orally administered to the rats fed with either basal diet or HC diet groups for 7 days. In addn., the LPSS powder (0.14%) mixed with basal diet or HC diet was fed to the rats for 7 days. Serum total cholesterol and LDL-cholesterol contents were not altered by administration of the LPSS oil suspension with basal diet. However, they were significantly decreased by administration of the LPSS oil suspension with HC diet at day 14. Also, they were significantly decreased by the LPSS powder mixed with basal diet or HC diet at day 9, 11, 14. HDL-cholesterol contents were not altered by the LPSS oil suspension or LPSS powder. These results indicated that the **phytosterol** deriv.(LPSS) might decrease serum total cholesterol and LDL-cholesterol contents in rats.

L112 ANSWER 21 OF 40 CAPLUS COPYRIGHT 2000 ACS
1998:636787 Document No. 130:24326 Effectivity and safety testing: Becel with **phytosterols** for effective cholesterol lowering.
Louwes, A. C. M. (Neth.). Voeding, 59(9), 6-8 (Dutch) 1998. CODEN: VOEDAK. ISSN: 0042-7926. Publisher: Keesing Noordervliet.

AB Becel margarine with various plant sterol additives was tested in volunteers at a dose of 3 g total sterols/day for its effectiveness in **lowering serum cholesterol** levels. Margarine contg. esterified soybean sterols **lowered** the total cholesterol and LDL cholesterol levels by 7-8 and 12-13%, resp.; this effect was dose dependent, and HDL cholesterol levels and other blood parameters remained unchanged. Margarine contg. **sitostanol** esters was somewhat less effective, and margarine contg. rice germ sterols or shea seed sterols had little effect on cholesterol levels. All the margarines **lowered** the serum carotenoid levels. Toxicol. testing showed no mutagenic, pseudoestrogenic, hematol., or gastrointestinal effects of plant steroids.

L112 ANSWER 22 OF 40 CAPLUS COPYRIGHT 2000 ACS
1997:617966 Document No. 127:257634 Z-2-[4-(4-Chloro-1,2-diphenyl-but-1-enyl)phenoxy]ethanol as **serum cholesterol** lowering agent, preparation thereof, and pharmaceutical compositions. Harkonen, Pirkko; Miettinen, Tatu; Mantyla, Eero; Kangas, Lauri; DeGregorio, Michael (Orion-Yhtyma Oy, Finland; Harkonen, Pirkko; Miettinen, Tatu; Mantyla, Eero; Kangas, Lauri; DeGregorio, Michael). PCT Int. Appl. WO 9732574 A1 19970912, 10 pp. DESIGNATED STATES: W: AM, AU, AZ, BA, BG, BR, BY, CA, CN, CZ, EE, FI, GE, HU, IL, IS, JP, KG, KP, KR, KZ, LK, LT, LV, MD, MK, MX, NO, NZ, PL, RO, RU, SG, SI, SK, TJ, TM, TR, UA, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1997-FI140 19970304. PRIORITY: GB 1996-4577 19960304.

AB A method of **lowering serum cholesterol** levels comprises administering to a patient in need of such **treatment** an effective amt. of Z-2-[4-(4-chloro-1,2-diphenyl-but-1-enyl)phenoxy]ethanol (I). Pharmaceutical compns. useful in the method are also disclosed, as is use of I in the manuf. of a medicament for the prevention or **treatment** of atherosclerosis. Prepn. of I is described.

L112 ANSWER 23 OF 40 MEDLINE
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1998077368 Document Number: 98077368. **Reduction of serum cholesterol in postmenopausal women with previous myocardial infarction and cholesterol malabsorption induced by dietary sitostanol ester margarine: women and dietary sitostanol**
. Gylling H; Radhakrishnan R; Miettinen T A. (Department of Medicine, University of Helsinki, Finland.) CIRCULATION, (1997 Dec 16) 96 (12) 4226-31. Journal code: DAW. ISSN: 0009-7322. Pub. country: United States.

Language: English.
AB **BACKGROUND: Reduction of serum cholesterol**
decreases mortality in primary and especially in secondary prevention. We investigated how effectively postmenopausal women with a previous myocardial infarction reduced their serum cholesterol with dietary means by using **sitostanol** ester rapeseed oil margarine, alone and in combination with statins, and to what extent cholesterol metabolism was affected. **METHODS AND RESULTS:** The first study group consisted of 22 randomly chosen women with angiographically documented coronary artery disease. Baseline studies on home diet were followed by double-blind, randomized, cross-over studies on margarine without and with **sitostanol** (3 g/d) ester for 7 weeks in random order. A second group of 10 women on simvastatin consumed **sitostanol** ester margarine for 12 weeks. **Sitostanol** ester margarine lowered serum total cholesterol by 13% (P<.05) and LDL cholesterol by 20% (P<.01). **Sitostanol** ester margarine reduced total cholesterol in all patients, LDL cholesterol <2.6 mmol/L (<100 mg/dL) in 32%, and <3.4 mmol/L (<133 mg/dL) in 73% versus none and 27% during the home diet (P<.01 for both). Combined with simvastatin, **sitostanol** still reduced total and LDL cholesterol by 11+/-3% and 16+/-5% (P<.01 for both). **Sitostanol** reduced absorption (-45%), increased fecal elimination (+45% as neutral sterols), and stimulated synthesis (+39%) of cholesterol. High cholestanol and plant sterol (high cholesterol absorption) and low baseline precursor sterol proportions (low cholesterol synthesis) predicted high decreases in serum cholesterol.
CONCLUSIONS: Dietary use of **sitostanol** ester margarine normalizes LDL cholesterol in about one third of women with previous myocardial infarction, especially in those with high baseline absorption and low synthesis of cholesterol, and in combination with statins reduces the needed drug dose.

L112 ANSWER 24 OF 40 MEDLINE

96048304 Document Number: 96048304. Sterol absorption and sterol balance in **phytosterolemia** evaluated by deuterium-labeled sterols: effect of **sitostanol treatment**. Lutjohann D; Bjorkhem I; Beil U F; von Bergmann K. (Department of Clinical Pharmacology, University of Bonn, Germany..) JOURNAL OF LIPID RESEARCH, (1995 Aug) 36 (8) 1763-73.

Journal

code: IX3. ISSN: 0022-2275. Pub. country: United States. Language: English.
AB Absorption of dietary cholesterol, campesterol, and **sitosterol**, cholesterol balance, and fecal excretion of plant sterols were determined in three unrelated patients with **phytosterolemia** and three healthy volunteers during constant intake of cholesterol and plant sterols

using accurate gas-liquid chromatography-mass spectrometry techniques. Each subject received a mixture of [26,26,26,27,27,27-2H6]cholesterol, [6,7,7-2H3]sitostanol, and [6,7,7-2H3]campesterol together with two non-absorbable markers, [5,6,22,23-2H4]sitostanol and chromic oxide. Feces were collected from days 5 to 7 and absorption of different sterols was calculated from the intestinal disappearance of the different sterols relative to [5,6,22,23-2H4]sitostanol and chromic oxide. The results obtained by the two markers were not different and the absorption of cholesterol averaged 53 +/- 4% for the patients (mean +/- SD) and 43 +/- 3% for the volunteers. Campesterol absorption averaged 24 +/- 4% in patients and 16 +/- 3% in healthy volunteers, whereas sitosterol absorption averaged 16 +/- 1% and 5 +/- 1%, respectively. Cholesterol synthesis expressed by body weight varied considerably in the two groups but appeared to be about 5 times lower in patients than in controls. Administration of a high dose of sitostanol (0.5 g t.i.d.) to two patients was followed by a reduction in cholesterol absorption by 24% and 44%, an increase in fecal output of cholesterol and steroids derived from cholesterol and plant steroids, and a marked reduction of serum cholesterol, campesterol, and sitosterol. Under the conditions used, inhibition of cholesterol absorption by sitostanol was not followed by a significant rise in cholesterol synthesis. The time of observation was, however, too short to allow final conclusion on this. The results show that the absolute difference in absorption rate of different sterols between the patients and healthy volunteers was about the same. As a consequence, increasing hydrophobicity

causes a relative decrease of absorption rates. Thus, patients with phytosterolemia seem to have a generally increased absorption of sterols rather than a loss of a specific discriminatory mechanism, and oral administration of sitostanol seems to be an interesting new approach for treatment of phytosterolemia.

L112 ANSWER 25 OF 40 MEDLINE

96036647 Document Number: 96036647. Reduction of serum cholesterol with sitostanol-ester margarine in a mildly hypercholesterolemic population [see comments]. Miettinen T A; Puska P; Gylling H; Vanhanen H; Vartiainen E. (Department of Medicine, University of Helsinki, Finland..) NEW ENGLAND JOURNAL OF MEDICINE, (1995 Nov 16) 333 (20) 1308-12. Journal code: NOW. ISSN: 0028-4793. Pub. country: United States. Language: English.

AB BACKGROUND. Dietary plant sterols, especially sitostanol, reduce serum cholesterol by inhibiting cholesterol absorption. Soluble sitostanol may be more effective than a less soluble preparation. We tested the tolerability and cholesterol-lowering effect of margarine containing sitostanol ester in a population with mild hypercholesterolemia. METHODS. We conducted a one-year, randomized, double-blind study in 153 randomly selected subjects with mild hypercholesterolemia. Fifty-one consumed margarine without sitostanol ester (the control group), and 102 consumed margarine containing sitostanol ester (1.8 or 2.6 g of sitostanol per day). RESULTS. The margarine containing sitostanol ester was well tolerated. The mean one-year reduction in serum cholesterol was 10.2 percent in the sitostanol group, as compared with an increase of 0.1 percent in the control group. The difference in the change in

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serum cholesterol concentration between the two groups was -24 mg per deciliter (95 percent confidence interval, -17 to -32; $P < 0.001$). The respective reductions in low-density lipoprotein (LDL) cholesterol were 14.1 percent in the sitostanol group and 1.1 percent in the control group. The difference in the change in LDL cholesterol concentration between the two groups was -21 mg per deciliter (95 percent confidence interval, -14 to -29; $P < 0.001$). Neither serum triglyceride nor high-density lipoprotein cholesterol concentrations were affected by sitostanol. Serum campesterol, a dietary plant sterol whose levels reflect cholesterol absorption, was decreased by 36 percent in the sitostanol group, and the reduction was directly correlated with the reduction in total cholesterol ($r = 0.57$, $P < 0.001$). CONCLUSIONS. Substituting sitostanol-ester margarine for part of the daily fat intake in subjects with mild hypercholesterolemia was effective in lowering serum total cholesterol and LDL cholesterol.

L112 ANSWER 26 OF 40 MEDLINE

DUPLICATE 3

96113514 Document Number: 96113514. The effect of cholesterol absorption inhibition on low density lipoprotein cholesterol level. Gylling H; Miettinen T A. (Second Department of Medicine, University of Helsinki, Finland.) ATHEROSCLEROSIS, (1995 Oct) 117 (2) 305-8. Journal code: 95X. ISSN: 0021-9150. Pub. country: Ireland. Language: English.

AB The degree of serum cholesterol lowering by up to almost maximal inhibition of cholesterol absorption was tested during neomycin and neomycin + sitostanol treatment in six hypercholesterolemic men. Neomycin decreased cholesterol absorption efficiency by 49% and the combination by 79%, and serum cholesterol level by 27% and 36%, respectively. The correlation between the absorption percentage and low density lipoprotein (LDL) cholesterol was significant ($r = 0.510$), and the regression equation ($y = 0.04x + 2.59$) suggested that the mean LDL cholesterol content would be about 2.5 mmol/l at zero cholesterol absorption. In conclusion, in hypercholesterolemic subjects, the lowering of LDL cholesterol appears to be limited to a low normal range only by almost totally inhibiting cholesterol absorption.

L112 ANSWER 27 OF 40 CAPLUS COPYRIGHT 2000 ACS

1995:639977 Document No. 123:65634 Serum cholesterol-lowering effects and triterpenoids of the herbs of *Lactuca indica*. Park, Hee Juhn; Lee, Myung Sun; Lee, Eun; Choi, Moo Young; Cha, Bae Chun; Jung, Won Tae; Young, Han Suk (Coll. Life Sci. Natural Resour., Sangji Univ., Wonju, 220-702, S. Korea). *Saengyak Hakhoechi*, 26(1), 40-6 (Korean) 1995. CODEN: SYHJAM. ISSN: 0253-3073.

AB A methanol ext. of the herbs of *Lactuca indica* L. effectively decreased the serum levels of total cholesterol and LDL-cholesterol when orally administered with diet. A chloroform-sol. fraction showed the similar effects with the methanol ext. Chromatog. sepn. afforded a mixt. of triterpene alcs. and their acyl derivs. A mixt. of triterpene alcs. were identified as .beta.-amyrin, .alpha.-amyrin, lupeol, pseudotaraxasterol, taraxasterol, and germanicol by spectroscopic methods. The acyl moieties in the corresponding acyl mixt. were characterized as acetates and palmitates. Three kinds of sterols such as .beta.-sitosterol, campesterol and stigmasterol were isolated as a mixt. state.

L112 ANSWER 28 OF 40 MEDLINE

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95163652 Document Number: 95163652. Cholesterol malabsorption caused by **sitostanol** ester feeding and neomycin in pravastatin-treated hypercholesterolaemic patients. Vanhanen H. (Second Department of Medicine, University of Helsinki, Finland..) EUROPEAN JOURNAL OF CLINICAL PHARMACOLOGY, (1994) 47 (2) 169-76. Journal code: EN4. ISSN: 0031-6970. Pub. country: GERMANY: Germany, Federal Republic of.

Language: English.

AB **Serum cholesterol** values were insufficiently reduced by pravastatin in two different patient populations. Therefore, we studied whether further cholesterol **reduction** could be achieved by inhibiting both cholesterol synthesis (by pravastatin) and absorption (by neomycin or **sitostanol** ester). Thus, we measured **serum cholesterol**, cholesterol precursors (reflecting cholesterol synthesis), cholestanol and plant sterols (reflecting cholesterol absorption and biliary secretion) for up to 6 weeks in pravastatin-treated patients with familial hypercholesterolaemia (FH, n = 13) and with and without ileal bypass during addition of neomycin (1.5 g per day) and in another patient population of non-FH (n = 14) subjects during addition of **sitostanol** ester (1.5 g per day). Addition of neomycin lowered serum total, LDL and HDL cholesterol by a further 20%, and increased the pravastatin-lowered precursor:cholesterol ratios by 20% (irrespective of ileal bypass). It also reduced by 20% the plant sterol:cholesterol ratio (irrespective of ileal bypass) which was markedly increased by pravastatin alone. Pravastatin and neomycin in combination lowered total, LDL and HDL cholesterol by 45%, 53% and 17%, respectively. This combined regimen reduced the serum lathosterol:cholesterol ratio to about half of the reduction caused by pravastatin, while the elevation of the plant sterols:cholesterol ratio was less with the combination than with pravastatin alone. Changes in **serum cholesterol** precursor:cholesterol and plant sterol:cholesterol ratios during the combined treatment were smaller in the subgroup with ileal bypass. Addition of **sitostanol** ester did not lower serum total or LDL cholesterol nor the precursor:cholesterol ratios significantly, while the **reduction** observed in the plant sterols:cholesterol ratios was similar to that achieved with neomycin addition. (ABSTRACT TRUNCATED AT 250 WORDS)

L112 ANSWER 29 OF 40 CAPLUS COPYRIGHT 2000 ACS

1994:671840 Document No. 121:271840 Effect of the acyl-CoA:cholesterol acyltransferase inhibitor DuP 128 on cholesterol absorption and **serum cholesterol** in humans. Hainer, James W.; Terry, J. Greg; Connell, Jill M.; Zyruk, Hanna; Jenkins, Rhonda M.; Shand, Donna L.; Gillies, Peter J.; Livak, Kenneth J.; Hunt, Thomas L.; et al. (DuPont Merck Pharmaceutical Company, Wilmington, DE, 19880-0026, USA). Clin. Pharmacol. Ther. (St. Louis), 56(1), 65-74 (English) 1994. CODEN: CLPTAT.

ISSN: 0009-9236.

AB Intestinal cholesterol esterification by the enzyme acyl-CoA:cholesterol acyltransferase (ACAT) is a presumed prerequisite for cholesterol absorption. We evaluated the effect of a potent, poorly absorbed ACAT inhibitor (DuP 128:

N'-(2,4-difluorophenyl)-N-[5, (4,5-diphenyl-1H-imidazol-2-ylthio)pentyl]-N-heptylurea) on cholesterol absorption in a randomized Prepared by M. Hale 308-4258 Page 35

trial. Thirty subjects received DuP 128 for 7 wk, 10 each at 900 mg per day, 1800 mg per day, and 3600 mg per day; six subjects received placebo; and nine subjects received 1 gm neomycin twice a day. Cholesterol absorption detns. used a continuous dual isotope ¹⁴C-cholesterol and ³H-beta **sitosterol** method. DuP 128 (pooled doses) induced at 14.4% .+- . 11.4% **redn.** in cholesterol absorption ($p < 0.05$ vs. placebo): 17.6% .+- . 8.4% at 900 mg, 9.1% .+- . 11.4% at 1800 mg, and 17.1% .+- . 12.9% at 3600 mg. Neomycin induced a 26.4% .+- . 10.7% **redn.** ($p < 0.01$). After 6 wk, neomycin **reduced** serum total and low-d. lipoprotein cholesterol by 22.4% .+- . 9.2% and 24.0% .+- . 11.6%, resp. ($p < 0.01$ vs. placebo). DuP 128 induced **redns.** of 3.9% .+- . 11% (difference not significant) and 4.95% .+- . 14.3% ($p = 0.05$). ACAT inhibitors limit cholesterol absorption in humans; however, the magnitude of the effect, as exemplified by DuP 128, is small.

L112 ANSWER 30 OF 40 MEDLINE

91298880 Document Number: 91298880. Hypocholesterolemic activity of beta-**sitosterol** in cholesterol fed sea quail. Day C E. (Audax, Inc., Leitchfield, KY 42754..) ARTERY, (1991) 18 (3) 125-32. Journal code: 8NN. ISSN: 0098-6127. Pub. country: United States. Language: English.

AB Male SEA quail were fed a 0.5% cholesterol supplemented diet, to which was

added 0%, 1%, and 2% beta-**sitosterol**, for a period of seven days. Dietarily administered beta-**sitosterol** **reduced** total serum cholesterol levels by 62% and 72% at the 1% and 2% treatment doses, respectively. This hypocholesterolemic activity of **sitosterol** in cholesterol fed SEA quail was anticipated on the basis of the numerous earlier studies demonstrating similar activity in cholesterol fed chickens. Beta-**sitosterol** was tested in SEA quail to experimentally confirm its expected serum cholesterol lowering effects and to expand further the utility of the SEA quail model in cholesterol and atherosclerosis research.

L112 ANSWER 31 OF 40 BIOSIS COPYRIGHT 2000 BIOSIS

1990:429645 Document No.: BA90:90446. ON THE HYPOCHOLESTEREMIC EFFECT OF ERYNGIUM-HETEROPHYLLUM. NAVARRETE A; NINO D; REYES B; SIXTOS C; AGUIRRE E; ESTRADA E. LABORATORIO PRODUCTOS NATURALES, AREA DE QUIMICA, DEP. PREPARATORIA AGRICOLA, UNIVERSIDAD AUTONOMA CHAPINGO, CHAPINGO, ESTADO DE MEXICO, CP 56230, MEXICO.. FITOTERAPIA, (1990) 61 (2), 182-184. CODEN: FTRPAE. ISSN: 0367-326X. Language: English.

AB Oral administration of an aqueous extract of *E. heterophyllum* caused reduction in the serum cholesterol in rats and significant hypotensive effect in humans. Mannitol, glucose and .beta.-**sitosterol** were identified as constituents of this plant.

L112 ANSWER 32 OF 40 MEDLINE

90032859 Document Number: 90032859. The mechanism of the hypocholesterolaemic effect of activated charcoal. Neuvonen P J; Kuusisto P; Manninen V; Vapaatalo H; Miettinen T A. (Department of Clinical Pharmacology, University of Helsinki, Finland..) EUROPEAN JOURNAL OF CLINICAL INVESTIGATION, (1989 Jun) 19 (3) 251-4. Journal code: EN3. ISSN:

0014-2972. Pub. country: ENGLAND: United Kingdom. Language: English.

AB The hypocholesterolaemic mechanism of activated charcoal was studied in
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seven patients with primary hypercholesterolaemia. The **reduction** of **serum cholesterol** was correlated with the serum concentrations of cholesterol precursors and of two plant sterols. Activated charcoal, 8 g t.i.d. for 4 weeks, **reduced** serum concentration of total cholesterol by 27% (P less than 0.01). The effect was accompanied by a moderate elevation (P less than 0.05) in serum squalene and desmosterol concentrations and by a marked increase (up to 300-700%) in serum lathosterol and delta 8 lathosterol concentrations.

The

levels of two plant sterols, campesterol and **beta-sitosterol**, were unchanged or only slightly decreased by the use of activated charcoal. The decrease of **serum cholesterol** concentration had significant negative correlations with serum lathosterol

and delta 8 lathosterol, and significant positive correlations with serum cholestanol and **beta-sitosterol**. These observations suggest an increased cholesterol synthesis upon **treatment** with activated charcoal, probably caused by the interference with the enterohepatic circulation of bile acids.

L112 ANSWER 33 OF 40 CAPLUS COPYRIGHT 2000 ACS

1984:208354 Document No. 100:208354 **Hypocholesteremic** effect of linoleic acid and **phytosterol**. I. Change in serum lipids in healthy men. Hasegawa, Kyoko; Shibuya, Kaori (Kagawa Nutr. Coll., Tokyo, Japan). Joshi Eiyo Daigaku Kiyo, 14, 165-72 (Japanese) 1983. CODEN: JEDKD7.

AB Twenty men (av. age 36.6 yr) were divided into 4 groups and each group was

given 3, 2, 1, or 0 g cottonseed sterol (82% **sitosterol** [83-46-5]) day/person for 5 days, fed with trilinolein [537-40-6] (60 g) or butterfat (50 g) and sunflower oil (10 g). Linoleic acid [60-33-3] lowered the **serum cholesterol** [57-88-5] levels, probably by accelerating the catabolism of cholesterol to bile acid. Administration of plant sterol (mainly **sitosterol**) **reduced** absorption of cholesterol. Thus vegetable oils, esp. germ oils, have **hypocholesteremic** effects since they are high in linoleic acid and **sitosterol**.

L112 ANSWER 34 OF 40 MEDLINE

82032551 Document Number: 82032551. Antihypercholesterolemic activity of **beta-sitostanol** in rabbits. Ikeda I; Kawasaki A; Samezima K; Sugano M. JOURNAL OF NUTRITIONAL SCIENCE AND VITAMINOLOGY, (1981) 27 (3) 243-51. Journal code: JFD. ISSN: 0301-4800. Pub. country: Japan.

Language: English.

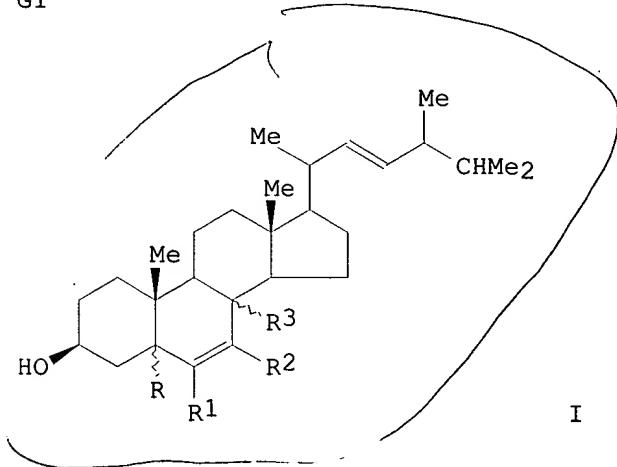
AB The antihypercholesterolemic activity of **beta-sitosterol** and **beta-sitostanol** was compared in male rabbits given a cholesterol-supplemented diet. **beta-Sitosterol** and **beta-sitostanol** were fed to these rabbits at the 0.5% level with cholesterol (0.5% and 0.2% in experiments I and II, respectively). The **serum cholesterol** level tended to be **lower** in rabbits fed **beta-sitostanol** than in the animals fed **beta-sitosterol** even in experiment I. The **beta-sitostanol** exhibited a significantly greater hypocholesterolemic activity in experiment II, LDL-cholesterol being decreased markedly. The liver cholesterol decreased in both groups of rabbits to a similar extent.

beta-

Sitostanol prevented more effectively the formation of dietary cholesterol-induced atheroma in the abdominal aorta than **beta-sitosterol**. It is most likely, together with the data reported previously on rats, that the hypocholesterolemic activity of **beta-sitostanol** results from the significantly greater inhibitory effect on the intestinal absorption of cholesterol than that of **beta-sitosterol**.

L112 ANSWER 35 OF 40 CAPLUS COPYRIGHT 2000 ACS
 1981:109362 Document No. 94:109362 Ergostadienetriols and compositions containing them. Zilliken, Fritz W. (Z-L Ltd., USA). U.S. US 4234577 19801118, 7 pp. Cont.-in-part of U.S. 4,157,984. (English). CODEN: USXXAM. APPLICATION: US 1977-804594 19770608.

GI



AB Pharmaceutical compns. contg. the title compds. I (R, R1, R2, and R3 = H or OH) are antioxidants and **anticholesteremics**. Thus, in an assay on chicks to det. the effect of I on serum cholesterol levels, I(R = R3 = OH, R1 = R2 = H) [76420-88-7] was 10 times as active as the known **.beta.-sitosterol** in **reducing serum cholesterol**. An antioxidant compn. also contained the isoflavone 2,3-dihydro-6,7-dihydroxy-3-(p-methoxyphenyl)-4H-1-benzopyran-4-one [76397-87-0].

L112 ANSWER 36 OF 40 MEDLINE

DUPLICATE 4

78020099 Document Number: 78020099. Hypocholesterolemic action of a novel delta8-dihydroabietamide derivative, THD-341, in rats. Enomoto H; Yoshikuni Y; Ozaki T; Zschocke R; Ohata K. ATHEROSCLEROSIS, (1977 Oct) 28 (2) 205-15. Journal code: 95X. ISSN: 0021-9150. Pub. country: Netherlands. Language: English.

AB The hypocholesterolemic properties of THD-341, N-(2,6-dimethylphenyl)-delta8-dihydroabietamide, were studied in rats. THD-341 **reduced serum cholesterol** levels in cholesterol-cholate-fed rats at a concentration of less than 0.001% in the diet or an oral dose of less

than 3 mg/kg, once a day. When compared in terms of the 50% inhibitory dose for **serum cholesterol** elevation (ID 50%, % in diet), THD-341 (0.0008%) was comparable to D-thyroxine (0.0005%), more potent than estradiol (0.003%), and far more potent than clofibrate (0.2%), **beta-sitosterol** (0.8%), cholestyramine (2%), or

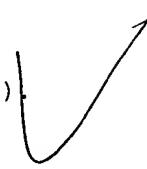
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nicotinic acid (3%). A daily intravenous injection of THD-341 was also effective (ID 50%: 7 mg/kg). THD-341 **reduced** serum and liver cholesterol in rats made hypercholesterolemic by 0.3% dietary thiouracil or 0.25% dietary cholate. Liver cholesterol was more profoundly affected than the **serum cholesterol**. In normal rats, cholesterol was **reduced** in liver but not in serum. Its mechanism of action is unknown but the results suggest that THD-341 inhibits cholesterol absorption or re-absorption.

L112 ANSWER 37 OF 40 CAPLUS COPYRIGHT 2000 ACS

1975:552376 Document No. 83:152376 **Anticholesteremic**
lecithin-.beta.-sitosterol composition. Ritter, Kurt (Ritter, D., und Co., Ger.). Ger. Offen. DE 2400518 19750710, 6 pp. (German).
CODEN: GWXXBX. APPLICATION: DE 1974-2400518 19740107.

AB The prepn., useful for the **lowering of serum cholesterol** consists of lecithin and .beta.-sitosterol (I) [83-46-5] in the ratio of about 2:1. I addn. **reduces** the daily dosage, in the form of capsules or tablets, to about 1/3 of the normal required for lecithin alone, or to about 5 g to 10/day. 

L112 ANSWER 38 OF 40 CAPLUS COPYRIGHT 2000 ACS

1975:491179 Document No. 83:91179 Antilipemic agent based on a soybean oil fraction. Kaneda, Takashi; Tabata, Toshikazu Ger. Offen. DE 2334652 19750130, 40 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1973-2334652 19730707.

AB An unsaponifiable fraction from soybean oil, contg. about 45% **phytosterols** about 20% tocopherols, showed oral antilipemic activity in doses (1.2-1.8 g/day) that did not cause liver or kidney damage or other toxic effects. The fraction was prepd. from deodorized soybean oil distillate by esterifying fatty acids with MeOH and removing them by mol. distillation at 170-80.degree. and 20-50 mm Hg. The fraction was mixt. with silicic anhydride, a binder, and antioxidant, and a surfactant, powd., kneaded with an organic solvent to a granulate, and encapsulated. Administration of the fraction orally in capsule at 1.2 g/day to hyperlipidemic patients decreased the **serum cholesterol** level from an av. of 260 to 225.9 mg/dl and .beta.-lipoproteins from 592.3 to 527.1 mg/dl after 2 weeks.

L112 ANSWER 39 OF 40 CAPLUS COPYRIGHT 2000 ACS

1973:79479 Document No. 78:79479 **Serum cholesterol reducing** agents. Rastogi, S. K. (G. R. Med. Coll., Gwalior, India). Curr. Med. Pract., 16(8), 333-5, 339 (English) 1972. CODEN: CMDPAW.

AB A review with 7 refs. **Serum cholesterol** [57-88-5]-**lowering** agents such as estrogens, thyroid hormones, nicotinic acid [59-67-6], atromid [8075-95-4], triparanol [78-41-1], **sitosterol** [83-46-5], and polyunsatd. vegetable oils are discussed.

L112 ANSWER 40 OF 40 CAPLUS COPYRIGHT 2000 ACS

1974:43793 Document No. 80:43793 Dietary factors and drugs affecting fecal sterol excretion. Forman, Donald T.; Taylor, C. Bruce (Med. Sch., Northwest. Univ., Evanston, Ill., USA). Treat. Hyperlipidemic States, 376-86. Editor(s): Casdorph, Herman Richard, Thomas: Springfield, Ill. Prepared by M. Hale 308-4258 Page 39

(English) 1971. CODEN: 27HXAF.
AB A review with 60 refs. on the lowering of serum
cholesterol (I) [57-88-5] by .beta.-sitosterol [
83-46-5], neomycin [1404-04-2], and hydrophilic colloids.

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